

# BAQ The Bureau of Air Quality



1999 Annual Report  
Volume XIX

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## INTRODUCTION

It is the goal of the South Carolina Department of Health and Environmental Control to ensure all South Carolinians enjoy clean air. While we continue to appreciate good air quality, changes in federal standards and a growing population will challenge our state and others to ensure clean air. Nineteen hundred ninety-nine was a year of both accomplishment and transition for the Bureau of Air Quality.

The Bureau of Air Quality has moved towards a streamlined permitting process in hopes of increasing compliance and ensuring that resources are used in the most effective manner. The use of General Permits greatly facilitated permit implementation for certain facilities such as concrete, asphalt, fuel combustion, and textile greige plants in 1999. Public participation in bureau initiatives continued to be given high priority during the year. South Carolina increased outdoor air monitoring capacity with the implementation of PM<sub>2.5</sub> monitoring and met goals for installation of new air quality monitoring sites.

Nineteen hundred ninety-nine also marked a time of planning. New regulatory requirements put forth by the Environmental Protection Agency (EPA) have made it necessary for South Carolina and many other states to consider plans for the further reduction of air pollution. In-depth scientific study is required to formulate a plan that best serves South Carolina and its citizens. During the year, the Bureau of Air Quality underwent organizational change to better meet the increasing demands of the 1990 Clean Air Act Amendments.

To maintain and improve air quality in South Carolina, greater public involvement and understanding of air quality issues is necessary. The goals of this publication are to describe air quality in South Carolina, to provide information on air pollution and its health effects, and to discuss

plans for the continued improvement of air quality. We hope that the information provided in this report will prove useful and serve to generate interest and participation in initiatives to protect the air quality in South Carolina.

### Highlights

- Installation of four continuous particulate matter 2.5 monitors and 21 reference method samplers at 19 sites.
- Promulgation of three air quality regulations.
- Expansion of ozone forecasting regions to include the Central Savannah River Area, in addition to the Midlands and Upstate.
- Bureau of Air Quality organizational changes to better meet the demands of the Clean Air Act Amendments.



### Department of Health and Environmental Control Goals and Visions

DHEC...promote, protect, prosper.

The South Carolina Department of Health and Environmental Control is one of a few unique organizations in the nation because health and environmental programs are combined under the same agency. This combination fosters partnership between program areas and ensures South Carolina has “healthy people living in healthy communities.” In fact, this is the vision for the entire agency. The Bureau of Air Quality performs



an important role in helping to meet goals established for the agency. Not only does the bureau take part in efforts to improve the organization as a whole, but also actively participates in achieving specifically listed goals. These goals are to protect and continually improve and restore the environment, and to assist communities in planning for, and responsibly managing growth. Because air affects everyone, from infants to seniors, ensuring that outdoor air is healthy to breathe is necessary.

**Agency Values:**

Customer Service

Teamwork

Cultural Competence

Applied Scientific Knowledge for Decision Making

Local Solutions to Local Problems

Excellence in Government

**SC DHEC Officials**

C. Earl Hunter

Commissioner, SC DHEC

R. Lewis Shaw

Deputy Commissioner,  
Environmental Quality Control

**Board of Health and Environmental Control**

Bradford W. Wyche

Chairman

Howard L. Brilliant, M.D.

Charleston

Carl L. Brazell

Columbia

Louisiana W. Wright

Aiken

Mark B. Kent

Greenville

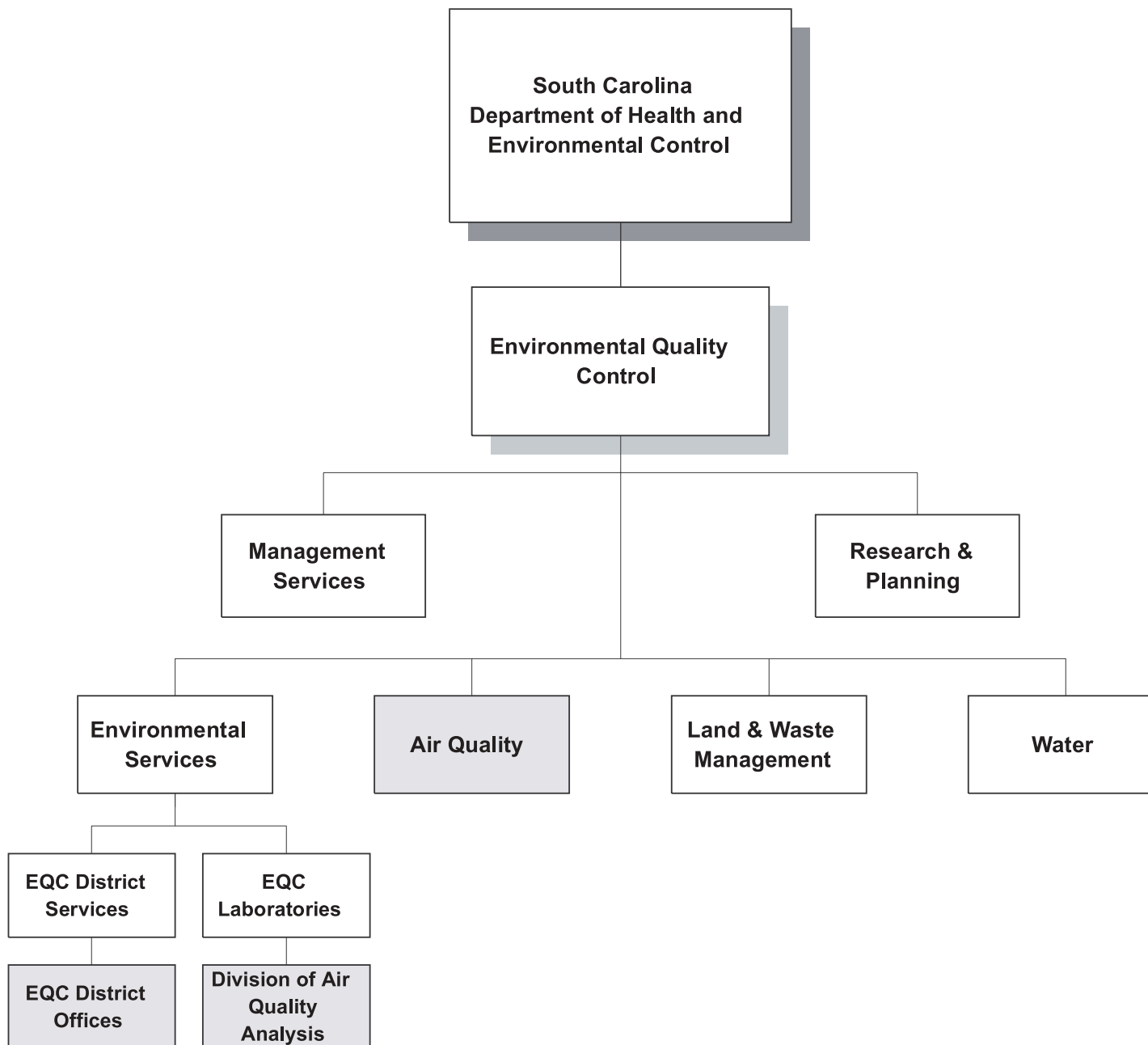
L. Michael Blackmon

Lancaster

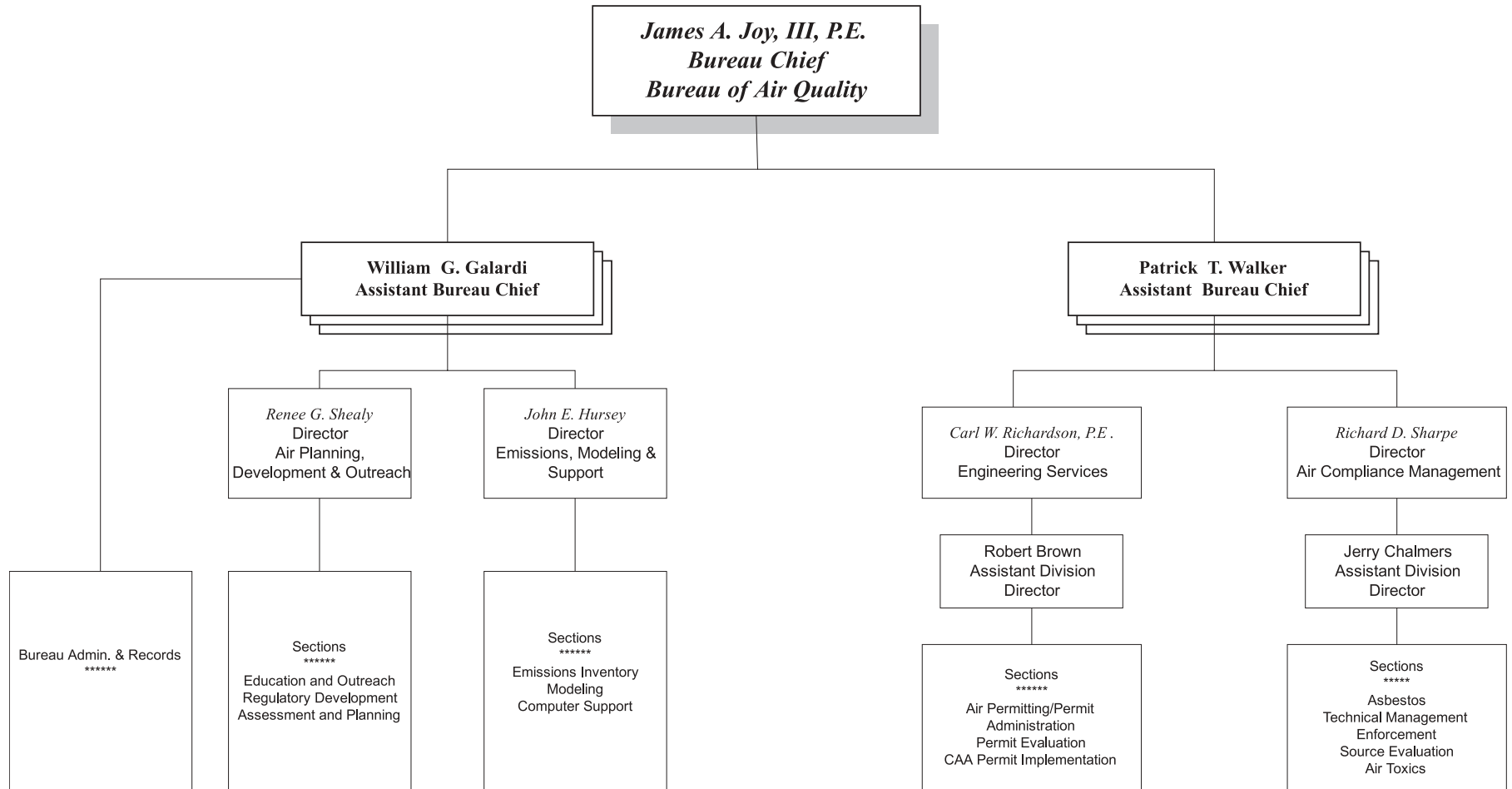
Larry Chewning, D.M.D.

Florence

*2001 SCDHEC Board Members*



# Bureau of Air Quality



## **Bureau of Air Quality Mission Statement:**

To conserve and enhance air resources in a manner that promotes quality of life.

To support this mission, the Bureau of Air Quality, in cooperation with the central office, district, air laboratory and small business administration staff, assures responsible stewardship of air quality and provision of customer service by:

- Assuring the air quality is within the limits prescribed by state and federal laws and defined in permits, licenses, and certifications;
- Monitoring and sampling air pollution sources and the outside air;
- Assessing the impact of environmental emergencies and providing timely response to those emergencies;
- Responding to requests for air quality related information in a timely manner;
- Administering an inspection and certification program for asbestos renovation and demolition projects;
- Designing and implementing emission control regulations;
- Issuing construction and operating permits for regulated sources of air emissions; and
- Taking enforcement actions when appropriate.

## **REGULATORY HISTORY**

### **The Clean Air Act**

The Clean Air Act (CAA), originally enacted in 1963, revised in 1970 and 1977, and amended in 1990, is a federal law that applies to the entire United States. This law limits the concentration of certain air pollutants in the outdoor air. Its nationwide applicability ensures that Americans living in all areas of the country may expect the same basic protection in regards to their health and the environment in which they live. Individual states can impose state regulations that are more stringent than the federal limits.

### **The National Ambient Air Quality Standards (NAAQS)**

Under the Clean Air Act, the EPA is responsible for setting the nationwide limits on air pollution concentrations. The pollutants for which there are National Ambient Air Quality Standards (NAAQS) are often referred to as the criteria pollutants and include ozone (O<sub>3</sub>), lead (Pb), particulate matter (PT or PM), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and carbon monoxide (CO). The purpose of these standards is to limit the concentration of pollutants in the ambient (outdoor) air. In states with areas that exceed any of these standards, the area becomes designated “non-attainment” for that particular standard. South Carolina currently meets all national air quality standards.

### **State Implementation Plan (SIP)**

One of the major requirements of the CAA was that each state submit a State Implementation Plan (SIP) to the EPA. A SIP is defined as a plan that provides for the implementation, maintenance, and enforcement of specific air quality standards. Essentially, the plan explains how each state will protect its air quality. The SIP includes the collection of control measures and the supporting documentation for each.



South Carolina's SIP was originally developed in late 1971, and approved by the EPA in May 1972. As with all SIPs, the South Carolina SIP document undergoes constant revision. As growth brings about changes in air quality and new standards are developed, the plan must be amended to ensure that air quality is protected. One of the greatest challenges facing the Bureau of Air Quality is developing a plan for attaining and maintaining ozone concentrations consistently below the national and state ozone standards.

## SOUTH CAROLINA'S AIR QUALITY STATUS

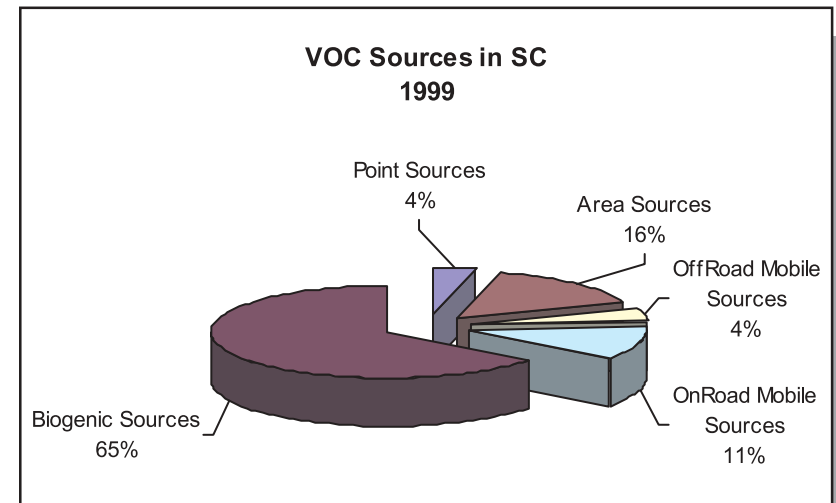
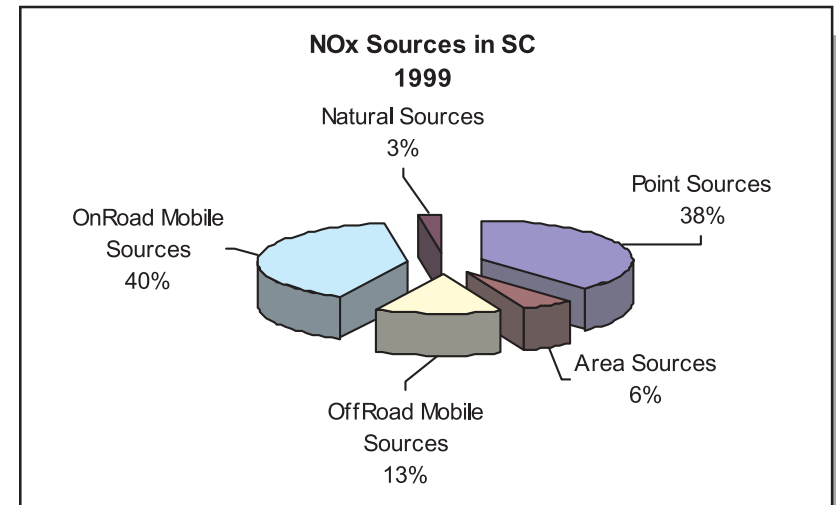
Air is a part of the environment with which we all must have contact. Materials in the air, from pollen to pollution, impact us directly through the air we breathe and indirectly by impacting the quality of our land and water resources. For the past decade, South Carolina has met all national air quality standards. Because we enjoy such good air quality in our state, most of us do not consider what it means to meet these standards.

In South Carolina, one of our greatest challenges is meeting the state one-hour standard and the proposed eight-hour standard for ground-level ozone. Ground-level ozone is a gas formed when oxides of nitrogen ( $\text{NO}_x$ ) and volatile organic compounds (VOCs) react in the presence of heat and sunlight.  $\text{NO}_x$  is produced by the combustion of fossil fuels (coal, oil, and gas) in motor vehicles, furnaces, or boilers. VOCs come from automotive exhaust and industrial solvents. At ground-level, high ozone concentrations can cause health and environmental concerns.

Among these concerns are:

- Irritated lungs;
- Increased susceptibility to respiratory illnesses;
- Interfered growth of plants;

- Reduced crop yield; and
- Damaged foliage of trees.



*Pollutant data listed by source type is reflective of calendar year 1999.*



In July 1997, the EPA revised the ozone standard. The EPA is required to designate areas as attaining or not-attaining new or revised national air quality standards. The new standard has been challenged and is currently under review by the federal legal system. It is important to note that air quality has not suddenly become worse, but rather, the standard of measure has become stricter. Designations will be made based on the latest three years of data.

Summer weather patterns have a great deal of influence on ozone concentrations. Generally speaking, hot, dry summers will result in higher concentrations of ozone. South Carolina experienced especially hot and dry weather in the summers of 1998 and 1999. A return to more normal weather patterns in the summers of 2000 and 2001 could influence the designation of attainment status of some areas. The EPA will work with states to determine boundary size.

## **Why Air Quality Is Important**

The national air standards are based on the best science available and are set to be protective of the most sensitive individuals. For each pollutant with a national standard, there is a primary and a secondary standard. The primary standard is set to protect public health. The Clean Air Act mandates that the basis of primary standards be entirely health-related, without considering the cost of attaining that standard. The secondary standard is set to protect public welfare. Public welfare measures include effects on soils, water, crops, vegetation, buildings, animals, weather, visibility, and economics, as well as personal comfort and well-being.

Health effects of air pollution can vary depending on the concentration level, duration, and the pollutant. Very young children and people with pre-existing respiratory diseases like asthma, chronic bronchitis, and emphysema are especially sensitive to air pollution. However, when

concentrations of certain pollutants are high, almost anyone who engages in moderate outdoor physical activity may be affected. Some of the most common health effects of air pollution exposure include eye and throat irritation, coughing, shortness of breath, and increased susceptibility to respiratory infections.

Air pollution is also harmful to the environment. Specific environmental effects of air pollution include: damage to trees; reduced crop yields; increased corrosion of metals; deterioration of stone and paint on buildings, cars, and cultural landmarks.

Ultimately, air pollution can have economic effects on South Carolina. Our state is well-known for beautiful landscapes. Many visitors cross our borders each year and support the tourism industry. We want to be certain these natural resources are preserved so that tourists will continue to make South Carolina a destination of choice. Furthermore, the failure to meet air quality standards could make it difficult to attract new industry to the state. As a result, investment and employment opportunities could be reduced.

## **Measuring South Carolina's Air Quality**

The concentration of pollutants in the air is a result of the release of pollutants and pollutant precursors in the state, movement of the air within and across state boundaries, and the weather. The Bureau of Air Quality is responsible for assuring that air quality standards are met in South Carolina; the backbone of the program is based upon the permitting of industrial sources. An important part of the Bureau of Air Quality's role is scientifically quantifying the concentration of air pollutants in all areas of the state. In addition to permit requirements, aspects of this measurement include maintenance of an air monitoring network, completion of emissions inventories, ozone modeling, district oversight of permitted processes and source evaluation. These types of measurement

and oversight are important not only to assure public health, but also to provide sound data upon which policy decisions are made. To ensure compliance with air quality standards, enforcement actions are taken as necessary.

## Permitting

To maintain air pollution laws and regulations, the Bureau of Air Quality has a permitting system for industrial and commercial facilities that emit pollutants into the ambient (outdoor) air. A permit is a legal document that limits the amount of regulated pollutants that may be released by the permitted source. Before construction of a new facility begins, or before changes or additions are made to existing sources of air pollution, a permit to construct must be obtained from the bureau.

State regulations provide the basis for the bureau permitting system. These regulations allow for the issuance of all types of air permits which set limits on emissions. In South Carolina, our state regulations may be more stringent than those set at the federal level. In addition to construction permits, the bureau has authority to issue the following types of permits:

- **Title V Operating Permit:**  
Provides a comprehensive air quality permit for all major sources of air pollution. A major facility is one that has the potential to emit 100 tons per year or more of any air pollutant and/or has the potential to emit 10 tons of any hazardous air pollutant (HAP) or a combination of HAPs totaling 25 tons per year or more.
- **Conditional Major/Synthetic Minor Source Operating Permit:**  
An air operating permit for facilities which for various reasons, such as permit or physical restrictions on operating capacity, do not trigger Title V thresholds.
- **Minor Source Operating Permit:**  
An operating permit for facilities that have the potential to emit less than 100 tons per year.

South Carolina also has a Prevention of Significant Deterioration (PSD) regulation based on EPA's PSD program. This regulation allows only minimal emission impact on soils, vegetation, and visibility (in Class I areas) by new sources. Class I areas are parks and wilderness areas that the United States Congress has designated to be preserved in a relatively pristine condition. South Carolina has a single Class I area, Cape Romain National Refuge, located near Charleston. Air emissions from South Carolina facilities have the potential to impact Class I areas in other states as well.

Additionally, the bureau has delegated authority from EPA to implement New Source Performance Standards (NSPS) and certain National Emission Standards for Hazardous Air Pollutants (NESHAPs).

### Permits issued in 1999

Construction Permits:	1,237
Operating Permits:	264
PSD Permits:	8
Title V Permits:	56
Conditional Major Permits:	98

## Monitoring Network

South Carolina operates a network of samplers and monitors to measure the concentrations of the primary pollutants and other compounds that impact air quality. There are over 125 samplers and monitors at 47 sites that measure and track the quality of our air. The EPA and the bureau jointly select monitoring sites. Any network that monitors the environment needs to provide information that answers several questions:

- **What are the pollutant concentrations where people live?**  
Much of the monitoring takes place in and around urban areas where there are the most people and greatest number of air pollution sources. However, monitors are also placed in rural and agricultural areas to track how pollution impacts across the entire state.
- **What is the impact of a specific source or category of sources?**  
Some monitoring takes place at sites where the source of air pollution is expected to have the greatest impact.
- **What are the background concentrations?**  
The pollutant concentrations in areas where there are few pollution sources or are close to pristine provide a baseline for data collected over the rest of the network. This data also provides information about the long-range transport of pollutants.

Each site and monitor or sampler that is part of the network collects data that is representative of the pollutant concentrations over a certain area. This is the scale of the monitor. These range from micro scale for pollutant concentrations that change significantly over small distances (less than 100 meters) to a regional scale where concentrations are fairly consistent (for 40 kilometers or more).

The combination of scale and distribution of the samplers describes the representativeness of the monitoring data, or the confidence that the data

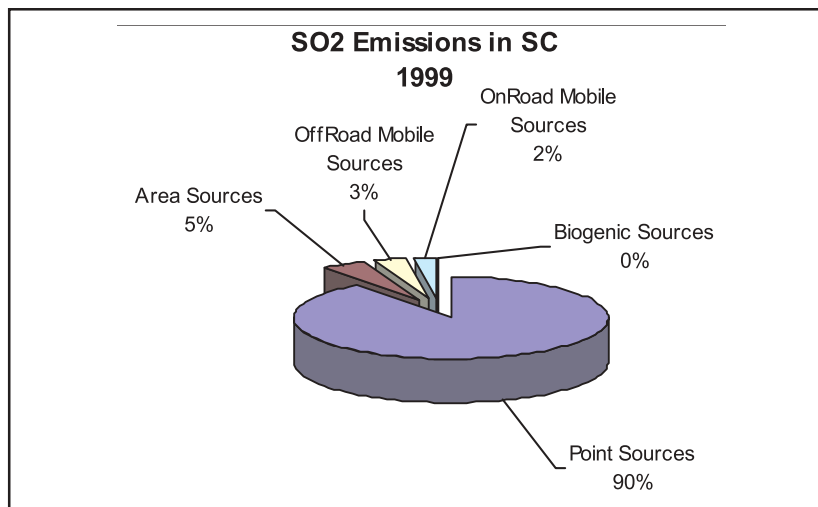
can represent those areas where there is no monitoring. Monitoring data not only needs to be representative across the state, but throughout the year. To make decisions based on the data, we must be confident that highs and lows have been accounted for and that the data hasn't been biased. The quality of the data is assured through regular evaluations using a process that includes calibrations and audits of the equipment, co-located samplers, redundant data acquisition, and additional audits by independent sources.

After quality assurance is complete, all data is put into EPA's Aerometric Information Retrieval System (AIRS), a national database. Data that is of uncertain quality is not used. In general, 75 percent of the data must be available to adequately represent the pollution concentration at a site. You may access AIRS data at [www.epa.gov/airsdata](http://www.epa.gov/airsdata). Appendix A contains summary monitoring data including percent data completeness by monitor and parameter.

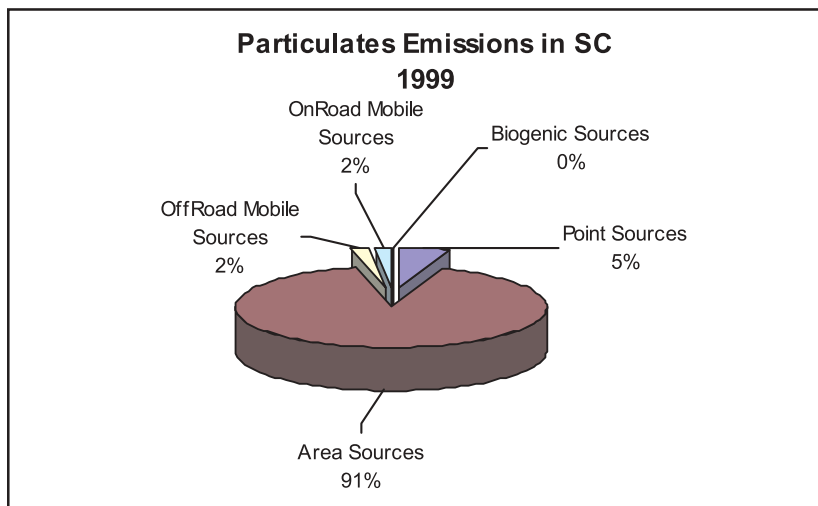
## Emissions Inventory

Emissions inventory is a way of identifying and estimating air emissions in our state. A standard process is used to account for emissions from a wide variety of sources. Data is quality assured to achieve accuracy and completeness. This information is important for use in policy and other decision-making processes and collection of the data is required by the EPA. Much of the data collected in the emission inventory process is later used in air quality models and as a basis for fees imposed on those emission sources.

The sources for which an emission inventory is completed include point sources, area sources, biogenic sources, and mobile sources. Point sources are stationary sources such as electric utilities, asphalt plants, steel mills, and most large industrial sources. Area sources individually do not make



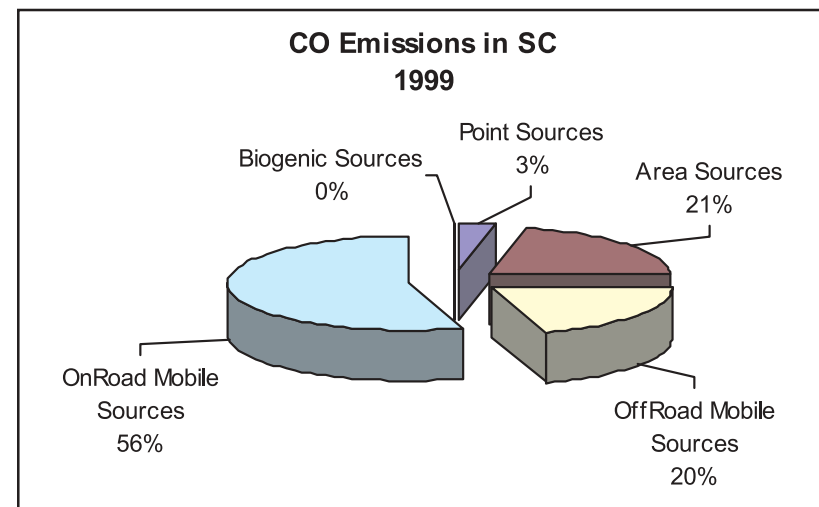
*Pollutant data listed by source type is reflective of calendar year 1999.*



*Pollutant data listed by source type is reflective of calendar year 1999.*

**Note: NO<sub>x</sub> and VOC emissions may be found on page 7.**

a large contribution to air pollution levels, but when added together, they may have a large impact. Examples of area sources include: gas-powered lawn equipment; everyday materials such as paint and lighter fluid; house painting; gas stations; and dry cleaners. Biogenic emissions do not come from a man-made process. For example, forest fires, trees, and other vegetation are natural sources of air pollution. Examples of mobile sources are passenger cars, motorcycles, buses, trucks, trains, airplanes, and construction equipment.



*Pollutant data listed by source type is reflective of calendar year 1999.*

## Ozone Modeling

Part of the bureau's responsibility for developing attainment strategy for all National Air Quality Standards includes the proposed 8-hour standard for ground-level ozone. Although this standard is currently in litigation, the bureau is moving forward with research and strategy planning to meet the 8-hour standard as it is now written.

Air modeling is a complex process in which variables such as air temperature, wind patterns, geography, and type and quantity of air pollutants are fed into a computer program. This program used to provide the information necessary to simulate the complex instructions that lead to pollution. The results generated indicate pollution concentrations in a given area. This data will be used by the bureau to meet its regulatory requirements for revising the South Carolina State Implementation Plan (SIP) to bring all areas in the state into compliance with the 8-hour ozone standard.

The modeling exercise will cover the entire state, with emphasis on areas where monitor measurements indicate failure to meet the standard. Monitor data indicates areas in the northern and central portions of the state may not meet the standard: specifically, the Anderson/Greenville/Spartanburg, Aiken/Columbia, Darlington/Florence, and Rock Hill areas.

## **Enforcement Section**

### ***Section Overview***

The main objective of the Enforcement Section is to facilitate the return of facilities, individuals, corporations, or municipalities in non-compliance to compliance. To accomplish this objective, the Air Compliance Section utilizes five mechanisms:

- 1) Notice of Non-Compliance
- 2) Notice of Violation (NOV)
- 3) Notice of Enforcement Conference
- 4) Consent Orders
- 5) Administrative Orders

### ***Section Activities***

- Issues Notices of Violation to sources in non-compliance;
- Negotiates with non-complying sources to resolve violations;
- Issues Consent Orders and Administrative Orders to sources in non-compliance;
- Prepares reports for the DHEC Board, the EPA, and others;
- Reviews Title V permit applications and Conditional Major permits; and
- Provides compliance assistance

### ***1999 Section Accomplishments:***

- Issued 243 Notices of Violations (Central Office)
  - 194 for Stationary Sources
  - 30 for Asbestos
  - 19 for Open Burning
- Issued 97 Orders (Central Office)
  - 71 for Stationary Sources
  - 14 for Asbestos
  - 12 for Open Burning
- Total penalties assessed for 1999:  
\$665,600

## **Technical Management Section**

### ***Section Overview***

The Technical Management Section reviews facility monitoring reports to determine conformance with state and federal regulations and permit requirements. Computerized databases are used to track these periodic submittals. The section also reviews all inspection/investigation reports,

generated by district inspectors, for consistency. The section is responsible for reviewing and approving air pollution control device monitoring plans and operational ranges required in Title V permits and assesses the accuracy of annual compliance certifications. The section also carries out district liaison activities, performs quality assurance assessments of source inspectors, and provides training for district personnel.

### ***Section Activities***

- Review monitoring reports for timeliness, accuracy, and completeness;
- Review district inspection/investigation reports for consistency;
- Approve reduced reporting frequency requests;
- Maintain section tracking databases;
- Conduct district inspector quality assurance evaluations to ensure statewide consistency;
- Review Title V annual compliance certifications;
- Coordinate outreach efforts to assist sources in understanding new regulatory requirements;
- Report quarterly compliance assistance activities to EPA;
- Update district personnel on bureau activities and procedures;
- Refer non-compliant sources to the Enforcement Section;
- Coordinate multi-media and other special inspection and investigation projects;
- Review and approve control device monitoring plans;
- Review and approve Title V control device operational ranges; and
- Review and approve incinerator operator training manuals.

### ***Section Accomplishments***

- Reviewed over 4000 periodic monitoring reports;
- Reviewed 2157 district inspection/investigation reports;
- Reviewed 780 continuous emission monitoring reports;
- Reviewed over 150 control device monitoring plans;
- Reviewed 35 annual compliance certifications; and
- Conducted 53 district inspector quality assurance evaluations.

### **District Services**

There are 12 Environmental Quality Control (EQC) district offices located around the state. District personnel include some or all of the following specialists: inspectors, biologists, chemists, geologists, engineers, field technicians, and support staff. The districts are involved in most EQC programs including water and wastewater quality, air quality, solid and hazardous waste, recreational waters, radiological health, and on the coast, shellfish sanitation.

District air quality staff provide a number of services designed to protect air quality. One of the primary responsibilities is responding to citizen concerns involving excessive emissions, odors, and open (outdoor) burning. When a non-emergency call is received by the district office, response is guaranteed within 48 hours. Typically, an inspector is sent out within one working day.

Open burning is the burning of any material in an open fire or an outdoor container when specifically designed equipment is not used to control the combustion or air pollution from the fire.

A large majority of complaints/concerns involve open burning. South Carolina allows certain kinds of open burning if the burning does not cause problems and it is not prohibited by local governments. It is illegal to conduct open burning of the following materials:

- Household garbage and trash;
- Paper;
- Motor and waste heating oils;
- Asphaltic materials (shingles, tar);
- Tires and other rubber products;
- Certain building materials, unless burning *untreated* wood at a construction site;
- Plastics;
- Paints;
- Household chemicals;
- Agricultural chemicals; and
- Electrical wire, or any material for its metal content.

For more information on open burning, contact the DHEC EQC district office nearest you. Address and contact information for each district office is listed in Appendix D.

Another district responsibility involves ensuring that sources of air pollution maintain compliance with air regulations. Each year, facilities are inspected for compliance with operation, maintenance, and visible emissions requirements. New and existing sources are inspected to assure they have or have maintained a current operating permit. Some facilities are required to have continuous emission monitors, which record on a

24-hour basis the pollution coming from the facility. District staff must also inspect these monitors.

#### **Total Inspections/Investigations conducted in 1999: 2,226**

Annual Inspections: 1,252

Major Source Inspections: 759

Minor Source Inspections: 475

Non-Permitted Source Inspections: 18

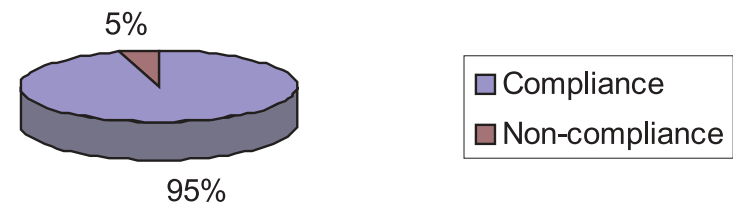
Continuous Emission Monitor Inspections: 128

Complaint Investigations: 1,826

Investigation related to Open Burning: 879

Notices of Violation Issued for Open Burning (from Central and District Offices): 207

#### **1999 Compliance Rate for Permitted Facilities**





## Source Evaluation

As part of permit requirements, some facilities are required to test emission sources periodically. The Bureau of Air Quality observes source tests and reviews the final reports submitted for these tests. These two activities ensure quality emission and process data. Information generated from these reports is used to determine compliance status, emission rates, and process conditions. This emission data is also used in the determination of air fees and penalties for violations, if any. Observation ensures that source test data is collected using the proper and approved EPA methodology.

The percentage of high priority tests observed and reports reviewed are indicators of performance. A high priority test is defined as any test whose results could make a significant impact on the compliance status of the facility. Also taken into account are the compliance and enforcement history of the facility, the complexity of the testing, and the frequency of the testing.

### Stack Testing Data

234 Total Tests  
174 High Priority Tests  
87.4% of High Priority Tests Observed

## Asbestos

Asbestos is a name given to a group of minerals that break apart into very fine and strong fibers. It is found worldwide in certain types of rocks. The EPA listed asbestos as an unsafe pollutant, a HAP, in the early 1970's. Asbestos has been used to make many products found in homes, factories, schools, and public buildings because it does not conduct

electricity and is not affected by heat. The health problems linked to asbestos can take many years to appear. Asbestos must enter the body to be harmful. The most common exposure is by breathing in the fibers. Exposure is known to cause asbestosis, a scarring and inflammation of the lungs, and cancer of the esophagus, colon, pancreas, and stomach. To find out if a material contains asbestos, contact the maker of the product or have it tested.

The Bureau of Air Quality is responsible for overseeing renovations and demolition of regulated facilities that are determined to contain asbestos. This oversight includes the following activities: responding to renovation and demolition notifications, licensing personnel who work to remove asbestos, auditing asbestos training courses to ensure effectiveness of the provider, responding to out-of-state requests for disposal, and inspecting asbestos sources to make compliance determinations. Carrying out these duties ensures that asbestos is removed according to regulation and in a manner protective of the public's health. Demolitions are regulated by DHEC and the EPA. An inspection for asbestos is required prior to demolition, and DHEC must be notified at least 10 working days before starting a demolition.

### 1999 Asbestos Activity Report

Notifications received and reviewed: 4,012  
Number of licenses issued: 3,416

## INCREASING PUBLIC KNOWLEDGE AND PARTICIPATION

### Public Participation, Involvement and Information

In South Carolina, public participation is encouraged to aid in developing plans, permits and regulations that are protective of the environment, cost effective, and has the widest public acceptance and opportunity for implementation. Primary responsibility rests with governmental agencies to administer air pollution control programs. However, public involvement in decision-making is necessary. The intent of public participation is to promote cooperation and mutual trust between the public and governmental agencies in an effort to restore and maintain the environment.

Citizens have the right and are encouraged to comment on regulations, permit applications, and other proposals before a state agency can put them into effect. This right is granted under a variety of federal and state laws.

We continue to look for ways to encourage public involvement in developing regulations and policies and in reaching permit application decisions. Early involvement is key to effective participation. Listed below are ways you may get involved:

- Be aware of regulations and policies under development;
- Participate in, or attend advisory committee, stakeholder, regulatory negotiation, or public information meetings;
- Comment on regulations when they are formally published for review; and
- Present comments at public hearings.

If you have specific questions about getting involved, please visit our Web page at [www.scdhec.net/baq/](http://www.scdhec.net/baq/) or call the bureau at (803) 898-4123.

### Public Hearings

Notice for public hearings prior to any action by the Board of Health and Environmental Control is provided for under State Agency Rule Making and Adjudication of Contested Cases, S.C. Code of Laws, Chapter 23, 1-23-110. Actions that require notice and a public hearing may relate to adoption, amendment, or repeal of regulations or standards, adoption or modification of final compliance dates, and other specified legal actions. A 30-day public notice is required before a public hearing is held. A comment period of at least 30 days is also provided along with the hearing notice. Additionally, public notice and opportunity for comment are required before significant industrial permits are issued.

### Public Information

Information on the air quality in South Carolina can be accessed on the World Wide Web. The Bureau of Air Quality home page address is: [www.scdhec.net/baq/](http://www.scdhec.net/baq/)



A wide variety of current and historical air quality information is available to assist industry, small businesses, consultants, government agencies, teachers, students, and the general public. The following list shows some of the information available on the bureau Web page.

### **112 (r) Accidental Release Prevention Program**

Background information, who is covered, regulated substances, Superfund Amendments and Reauthorization Act information (SARA Title III), Emergency Planning and Community Right-to-Know (EPCRA).

### **Air Dispersion Modeling**

Guidance documents, program files, user guides, and meteorological data.

### **Air Quality Fact Sheets**

Fact sheets including several on specific air pollutants, “25 Things You Can Do for Cleaner Air,” and various permitting and program fact sheets.

### **Asbestos**

General information, regulatory information, regulatory determination, resource lists, forms, and section contacts.

### **Contacts**

Complete Bureau of Air Quality contact listing alphabetized by subject.

### **Emissions Inventory**

Links to emission inventory documents and software and links to EPA Web pages and software.

### **Forms**

Wide variety of forms, from asbestos licensing to permit applications.

### **Guidance Documents**

### **Organization Charts**

### **Other Web Links**

Links to DHEC’s Center for Waste Minimization and Small Business Assistance Program (SBAP).

### **Ozone Monitoring Data**

Shows ozone concentration by region in South Carolina and actual monitoring data in Excel format.

### **Ozone Forecast (Spare the Air Campaign)**

By 3:30 p.m., from April 1-September 30, this site shows the ground-level ozone forecast for the next day. Also shows general information on ground-level ozone and links to members of the Clean Air Partnership.

### **Presentations**

Upon request, presentations by bureau staff will be loaded here.

### **Press Releases**

Current year DHEC press releases.

### **Public Notices**

Permitting notices listed by facility and regulatory development notices.

### **Publications**

Links to various publications, including “A General Guide to Environmental Permitting” and the Air Quality Annual Report.

### **Regulatory**

Collection of documents including SC Code of Law and SC State Register.

### **Student/Teacher Resources**

Air quality lesson plans, student activity sheets, art, and writing gallery.

## Training

Listing of telecourses and workshops. Some of these are open to the general public.

## What's New

Links to current "hot" topics.

Additional information on health and environmental issues can be found on the SC DHEC Internet Home Page at [www.scdhec.net](http://www.scdhec.net). The main DHEC information phone line is (803) 898-DHEC (898-3432).

For more environmental information, the EPA Home Page address is [www.epa.gov](http://www.epa.gov). The EPA Region 4 Office in Atlanta may be reached by phone at (404) 562-8357.

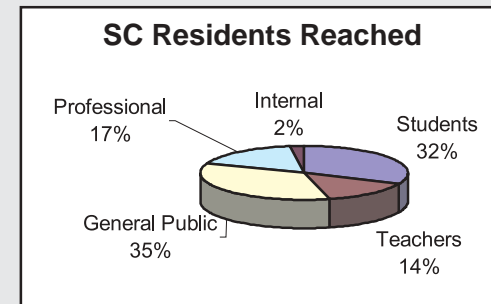
## Education and Outreach

It is important for South Carolina residents to be aware of air quality issues in the state, and to take an active role in preserving air quality. The education and outreach section within the bureau carries out many tasks to see that these goals are achieved. Activities include interactions with students of all ages, teacher training, curriculum and lesson plan development, material development, providing representation at regional and national air quality forums, and actively participating in ozone season activities. Partnerships with various civic organizations and participation in public events to raise awareness about air quality issues are given high priority.

## The bureau was represented at many places and events around the state in 1999.

### Schools:

Aiken Elementary Science Club, Aiken  
H.B. Rhame Elementary, Columbia  
Nursery Road Elementary, Irmo  
Congaree Elementary Career Day, Congaree  
Lander University, Greenwood  
Sue Cleveland Elementary School, Piedmont  
University of South Carolina, Columbia  
Coastal Carolina University



The graph above describes the various audiences reached through education and outreach activities.

### Events:

Kid's Day, Columbia  
Backyard Naturescape, Berkeley  
Back-to-School Bash, Columbia  
Energy 2 Learn, Columbia  
Kid's Safety Day, Columbia  
South Carolina State Fair, Columbia  
Teaching K.A.T.E, Aiken

**Other Organizations/Activities:**

Carolina's Air Pollution Control Association  
Leadership Lexington  
Parks as Classrooms, Cowpens National Battlefield  
Governor's Summit on Air Quality  
Lake Murray Power Squadron

## Training

The training area identifies the training needs and expectations for each discipline and/or section within the Bureau of Air Quality, as well as District and Lab Air staff, and assists staff in obtaining desired training. To accomplish this task, the Bureau of Air Quality uses products and services provided by EPA's Air Pollution Training Institute (APTI); area training centers; the Air Pollution Distance Learning Network (APDLN); other air pollution control training providers; and the Department of Health and Environmental Control's Office of Quality Management.

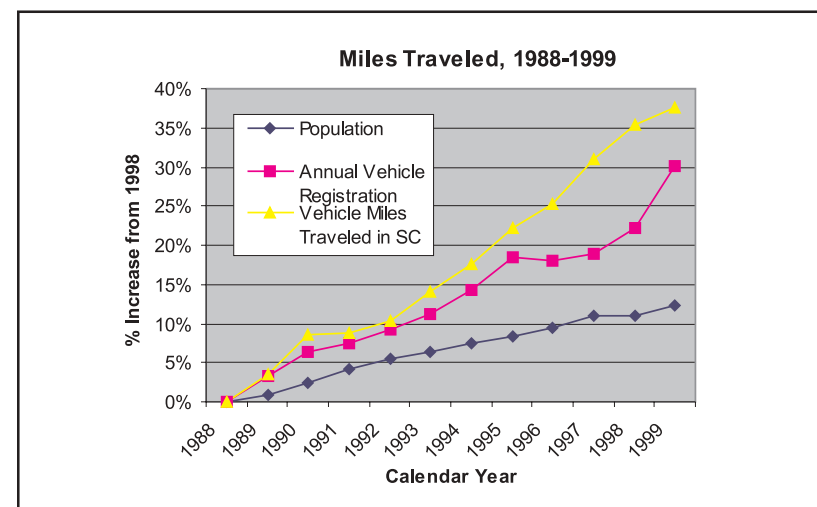
The Bureau of Air Quality, through a satellite downlink, shows nationally broadcast APDLN programs. The schedule of telecourses and workshops, which are offered free to the general public, can be found on the Bureau of Air Quality Web page. To attend a telecourse or workshop, please contact the site coordinator listed on the Web page.

The Bureau of Air Quality hosts Visible Emissions Evaluation (VEE) classroom lectures and field certification programs every six months. Eastern Technical Associates (ETA) of North Carolina is the training provider, and these "smoke schools" are held in March and September. Air program inspectors are required to maintain VEE certification in order to conduct observations of stationary source visible emissions and determine compliance with opacity standards. Through a cooperative agreement, E.I. DuPont sponsors two additional smoke schools each year

to help provide training to the regulated community. Further information on these training sessions may be obtained from ETA's Web page [www.eta-is-opacity.com](http://www.eta-is-opacity.com).

## "Spare the Air" Campaign

The "Spare the Air" Campaign was begun as a cooperative effort between the bureau, industry, and public interest groups as part of the Clean Air Partnership. The primary goal of the campaign is to encourage individuals to voluntarily reduce their contributions to air pollution. The campaign focuses on emissions from cars and trucks, because in South Carolina, these mobile sources are the largest contributors to ground-level ozone formation. Even though cars and trucks use cleaner fuels and technology than ever before, there are greater numbers of cars on the road, and more miles are being driven each year. This growth has offset the reduction in emissions that might otherwise have been expected as a result of improved technology and cleaner fuels.



However, there are steps you can take to help reduce emissions from cars and trucks. Taking the following actions, especially on ozone alert days, can make a difference.

**Drive less:** Fewer trips will reduce air pollution.

Carpool.

Walk or ride a bike.

Shop by phone, mail or the Internet.

Ride public transit where available.

Telecommute.

**Drive Smart:** How you drive your car can help reduce the pollution it creates.

Accelerate gradually.

Use cruise control on the highway.

Combine your errands into one trip, “trip-chain.”

Obey the speed limit.

Keep your car properly tuned.

Don’t top off your gas tank.

Replace your car’s air filter.

Keep your tires properly inflated.

When shopping for your next car, look for the most efficient, lowest polluting model.

For information on low pollution vehicles, visit the following EPA Web site: [www.epa.gov/autoemissions/index.htm](http://www.epa.gov/autoemissions/index.htm)

## Ozone Forecast and Ozone Season Summary

In South Carolina, ground-level ozone season is April 1-October 30 each year. However, the official ozone forecast season begins May 1 and ends September 30. During this time period, DHEC meteorologists make daily

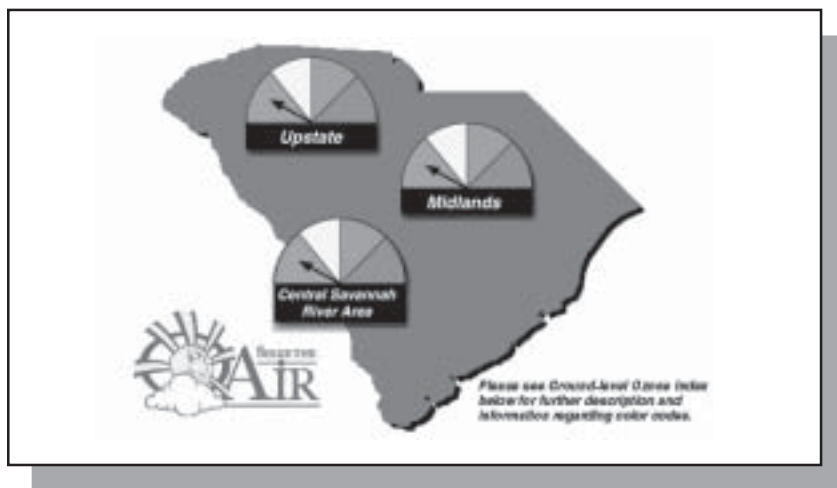
ozone forecasts available to the public. Forecast information is sent to television, radio, and printed news services as well as posted on the DHEC Web page at [www.scdhec.net/ozone](http://www.scdhec.net/ozone). It is important that the public be aware of ozone levels. Individuals may then take an active role in reducing their contribution to ozone formation and consider ozone’s health-related issues.

The forecast is issued as an easy-to-read four-color index (see chart below). In previous years, only three color-codes were used; green, yellow and red. The use of the additional color provides consistency with the EPA Air Quality Index used nationwide. Ozone action day alerts are issued for days when ozone levels are expected to approach or exceed the standard orange or red categories. Typically, we do not see a great number of orange and red days in South Carolina. However, summer weather patterns in South Carolina in 1998 and 1999 resulted in an increased number of ozone action days.

AIR QUALITY HEALTH CATEGORIES	PROTECT YOUR HEALTH AGAINST OZONE POLLUTION
<b>Code Green</b> Good	No health impacts expected.
<b>Code Yellow</b> Moderate	People unusually sensitive to air pollution should consider limiting prolonged outdoor exertion.
<b>Code Orange</b> Unhealthy for Sensitive Groups	Active children and adults, and people with respiratory diseases, like asthma, should limit prolonged outdoor exertion.
<b>Code Red</b> Unhealthy	Active children and adults, and people with respiratory disease should <i>avoid</i> prolonged outdoor exertion; everyone else should <i>limit</i> prolonged outdoor exertion.

## What Conditions Are Favorable For Ground-level Ozone Formation?

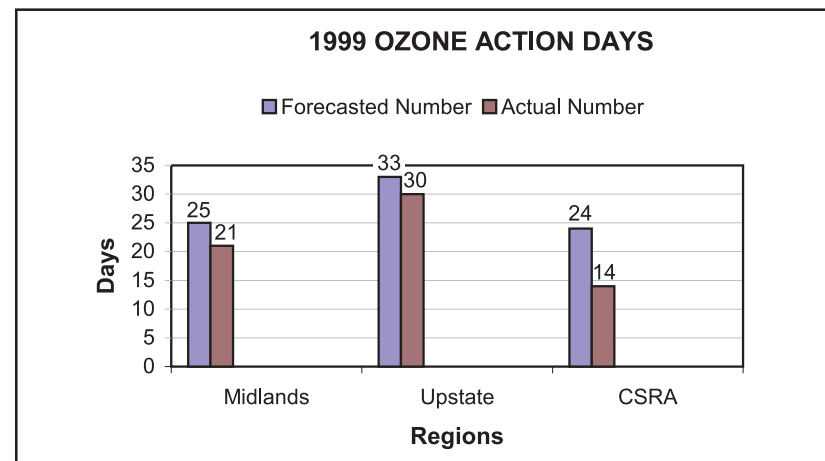
Bureau meteorologists look for several things that might indicate the formation of high concentrations of ground-level ozone. Ground-level ozone formation is impossible without the presence of the sun. Many days during the summer are hot in South Carolina; however, only a small portion of these days will reach the orange or red category. For these days to have high ozone concentrations, ozone precursors must be present. In other words, the precursors, nitrogen oxides and volatile organic compounds, “cook” to form ground-level ozone.



### Ozone Season in Review

In 1999, the Central Savannah River Area of Georgia and South Carolina was added as a third area for ozone forecast. The original two areas include the Midlands and Upstate. The summer of 1999 saw a continuance of the hot, dry weather pattern of the previous summer. As a result, there were greater than normal numbers of ozone action days. The chart on the right hand side of this page shows the numbers of ozone action days for all

areas of the state in 1999. Ozone action days forecast accuracy for the three areas in 1999 is as follows: Midlands area 84%; Upstate 91%; and Central Savannah River Area 58%.



*Ozone Action Day (Category Orange or Red)– A day in which active children, adults, and people with respiratory disease, such as asthma, should limit or avoid prolonged outdoor exertion.*

### Community Right-to-Know

In its third year at the Bureau of Air Quality, the Community Right-to-Know (CRTK) program took a broader approach to gathering and relating information on environmental impact. In the past, the public’s focus has been on pollution from major industrial sources. However, with the aid of new computer technology, the public’s “right-to-know” is expanding. The Bureau of Air Quality can respond to community concerns about local pollution more thoroughly. Such was the case in publishing a data summary containing 19 environmental maps and tables for the Charleston Community-Based Environmental Protection (CBEP) project. Using the agency’s centralized GIS files and other databases, and by working with



residents and Medical University of South Carolina (MUSC) staff, information was made available to local neighborhoods. The report explained how small and large businesses use the environment and included data on local water and air quality. As part of the project, trained residents presented pollution prevention information to over 100 small businesses not typically covered by DHEC's permitting programs

### **Toxic Release Inventory (TRI)**

The annual Toxics Release Inventory (TRI) provides a report card for the industry's reduced use of toxic chemicals. For over 11 years, South Carolina's largest manufacturers (about 450) have reported declining volumes of toxic chemicals released to the environment. Most of those reductions took place in the early years and have leveled off in the three years leading up to 1997 (the most recent data available in 1999). Reporting under TRI encourages better handling and less production of listed toxic chemicals. But like other states, resources have not been available to pro-actively work toward the next round of toxic reductions.

Currently, TRI releases are ranked based on a simple volume comparison. Future efforts in this area include ranking of TRI releases by relative risk.

### **Small Business Assistance Program (SBAP)**

In 1999, the Small Business Assistance Program worked to increase awareness among small businesses, trade groups, and units within the DHEC of services provided through the program. Activities included presentations to small businesses through local chambers of commerce and procurement forums. Information given out highlighted the need to consider environmental permitting and compliance issues along with other factors that may impact a company's bottom line. The SBAP periodically met with representatives of the Carolina Ready Mix Concrete Association

to provide an update on regulations, proposed and existing, that could impact them specifically. Site visits are also a component of the services offered by SBAP.

### **Indoor Air Quality**

The Bureau of Air Quality does not receive funding for an indoor air program. However, in recognition of the importance of indoor air quality and public health, the bureau does offer certain referral services and resources. Many calls regarding problems or concerns with air quality in the workplace, schools, and private residences are fielded by air quality staff. Additionally, bureau staff actively participate in groups such as the SC Asthma Planning Alliance. The efforts of the alliance are designed "to improve health management/quality of life for children with asthma." Sub-groups were established to begin looking at data available, interventions being conducted, air quality issues, and resources available. Membership in the Alliance consists of several program areas in DHEC, including the District offices, the State Department of Education, the State Department of Health and Human Services, the SC Lung Association, the Clemson Extension Services, and a private organization, Family Connections.

## **CONTINUED IMPROVEMENT OF AIR QUALITY**

### **Regulation Development Activities for 1999**

The bureau promulgated three regulations in 1999. Two of these regulations were undertaken for compliance with a federal mandate. These are R.61-62.60, *South Carolina Designated Facility Plan and New Source Performance Standards*, and R.61-62.68, *Chemical Accident Prevention Provisions*. The third regulation promulgated by the bureau was a revision to R.61-62.5, Standard 3, *Waste Combustion and Reduction*. A brief explanation of these regulations is provided on the following page.

*R.61-62.60, South Carolina Designated Facility Plan and New Source Performance Standards*

On March 12, 1996, the EPA promulgated rules under 40 FCR part 60, subpart Cc (Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills) and subpart WWW (Standards of Performance for Municipal Solid Waste (MSW) Landfills). The first of these rules (subpart Cc) was promulgated to control emissions from existing MSW landfills (constructed before May 30, 1991), while the latter regulation (WWW) was promulgated to control emissions from new MSW landfills (constructed on or after May 30, 1991). To comply with the federal mandate, the bureau promulgated a new regulation that incorporated the federal rules by reference. This regulation received final approval by the Board of Health and Environmental Control on January 14, 1999, and became effective upon publication in the State Register on February 26, 1999.

*R.61-62.68, Chemical Accident Prevention Provisions*

The EPA promulgated final rule amendments on January 6, 1999, and May 26, 1999, under 40 CFR Part 68. These rules amended the part 68 by adding four mandatory and five optional risk management plan (RMP) data elements and establishing specific procedures for protecting confidential business information when submitting RMPs. In addition, the revisions replaced the use of Standard Industrial Classification (SIC) codes with the North American Industry Classification System (NAICS) codes and revised the worst-case release scenario analysis for flammable substances. The bureau revised R.61-62.68 to incorporate the federal revisions. The regulation received final approval by the Board of Health and Environmental Control on October 14, 1999, and became effective upon publication in the State Register on November 26, 1999.

*R.61-62.5, Standard 3, Waste Combustion and Reduction*

This revision was undertaken to clarify and update portions of the existing regulation and to provide both the regulated community and the

department with clearer standards that are easier to comply with and enforce. As this amendment was not undertaken to comply with a federal mandate, it was required to be reviewed by the State Legislature. The regulation received final approval by the Board of Health and Environmental Control on January 14, 1999, and became effective upon publication in the State Register on June 25, 1999.

**Accidental Release Prevention Program - Risk Management Program 112(r)**

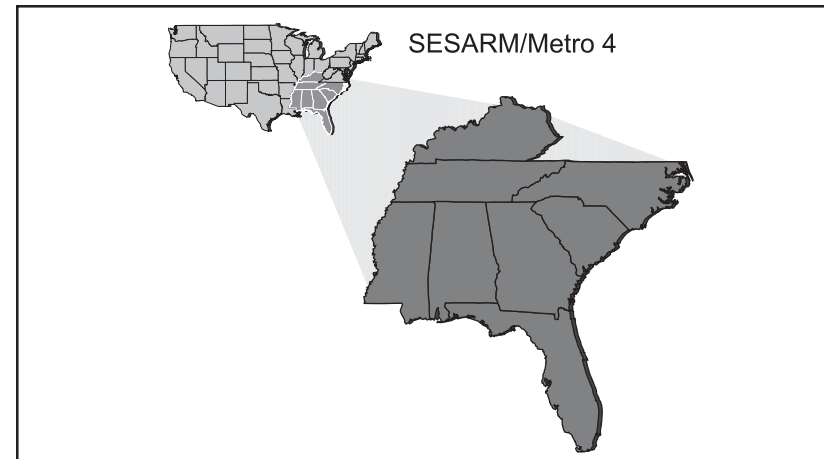
The 112(r) Risk Management Program builds upon other laws and programs that focus on emergency response and preparedness. The program ensures all affected facilities have programs in place to prevent accidental chemical air releases. These programs may include written procedures, operator training, preventive maintenance, and drills. The program's goal is to prevent harm to public and environment and to minimize consequences if releases do occur.

Risk Management Program became effective June 21, 1999. Over 200 facilities in South Carolina are covered. The Bureau of Air Quality ensures compliance by conducting periodic site inspections, auditing of records, and discussions with plant operators and officials and local emergency response personnel.

## **Southeastern States Air Resource Managers (SESARM)/ Metro 4**

SESARM is a non-profit corporation representing the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. SESARM is managed by a Board of Directors, which is comprised of the air pollution program director for the states listed. SESARM will assess and promote air quality issues in the southeast region of the United States. Its stated purpose is to:

- Enhance communications and joint efforts among members, the U.S. Environmental Protection Agency, and other organizations involved or interested in effective air pollution management, especially as it affects the states in the southeastern region of the country;
- Improve the overall effectiveness of members in meeting national air quality goals and any related air quality goals specific to the southeastern region of the country or within a specific state of the southeastern region;
- Conduct, contract for, and facilitate research and training useful to meeting the purposes stated herein;
- Evaluate current and emerging air quality issues, develop a consensus among members regarding these issues, and implement steps to resolve such air quality issues; and
- Establish work groups and task forces to investigate specific air quality issues of concern to the members and recommend action to improve and manage such concerns. Emphasis is given to issues that have regional implications or solutions.



## **Center for Waste Minimization**

The Center for Waste Minimization offers free, non-regulatory technical assistance to facilities in the state. Ensuring that facilities have a formal pollution prevention program is the center's first concern. Staff within the program help facilities determine how to reduce the total amount of waste generated at a facility, and how to productively use waste that can not be avoided. Changes in procedure which result in less waste generation, such as reusing water, substituting non-hazardous materials (often solvents), or changing to low or no-VOC containing paints and coatings are among the options the center may suggest.

For more information on the services offered by the Center for Waste Minimization, please call (803) 896-8986 or visit [www.scdhec.net/eqc/](http://www.scdhec.net/eqc/) and select Center for Waste Minimization.

## Environmental Facility Information System (EFIS)

The Environmental Facility Information System (EFIS) is a database that consolidates information on environmental facilities. This information includes permits, violations, enforcement actions, and compliance activities. Each of these data items is necessary to support regulatory requirements and environmental quality improvements for the water, air, and solid and hazardous waste program areas. The system is based on Oracle 8.1.6 and includes the capacity for the submittal of electronic forms via the World Wide Web and a Geographic Information System (GIS) interface.

### EFIS Modules

#### ***Persons and Companies (facilities)***

- EFIS supports unlimited types and numbers of addresses, phone numbers, and contacts.
- EFIS relates companies to other companies, projects, and incidents.

#### ***Permits***

- EFIS supports all permit types.
- Access security is handled by users and individual program areas.
- Permits are stored in the Microsoft Word format.

#### ***Projects***

- Multiple project types and tasks are tracked.

#### ***Compliance, Violations, Enforcement, and Referrals***

- EFIS tracks violations, enforcement actions, and alerts.

### ***GIS***

- Internet users can utilize GIS to view environmental facilities and related permit data.
- Intranet users use GIS to assist in permit decision-making.



## APPENDIX A — MONITORING DATA

**Total Suspended Particulate(TSP) - Ug/M3**  
**[Air quality standard = 75 Ug/M3 Annual Geom. Mean]**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	GEOM.	MAXIMUM 24-HR VALUES				OBSV	% Complete
						MEAN.	1ST	2ND	3RD	4TH		
45-003-1001	AIKEN	3699183	417056	BEECH ISLAND FIRE STATION		38?	105	78	74	71	46	77%
45-013-0001	BEAUFORT	3588480	530370	BEAUFORT COUNTY HEALTH DEPARTMENT	BEAUFORT	28?	85	69	53	51	26	65%
45-013-0007	BEAUFORT	3588470	530355	BEAUFORT KING STREET	BEAUFORT	18?	48	35	34	33	11	73%
45-019-0003	CHARLESTON	3638503	595649	JENKINS AV. FIRE STATION	NORTH CHARLESTON	36	105	66	65	64	59	98%
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		21?	71	59	57	54	53	88%
45-019-0047	CHARLESTON	3634157	598473	U S NAVAL BASE	NORTH CHARLESTON	27?	90	68	68	55	53	88%
45-033-0001	DILLON	3809572	649208	DILLON CITY-COUNTY OFFICE BLDG.	DILLON	32	66	65	62	60	60	100%
45-041-0001	FLORENCE	3784358	610696	FLORENCE COUNTY HEALTH DEPT	FLORENCE	33	82	77	72	70	60	100%
45-043-0002	GEORGETOWN	3693255	658389	HOWARD HIGH SCHOOL	GEORGETOWN	46	105	102	97	95	57	95%
45-043-0006	GEORGETOWN	3692520	658711	GEORGETOWN CMS	GEORGETOWN	69	153	132	124	117	50	83%
45-043-0007	GEORGETOWN	3690944	658375	MARYVILLE POWER SUB STATION	GEORGETOWN	22	69	57	52	51	57	95%
45-043-0009	GEORGETOWN	3693858	659490	WINYAH	GEORGETOWN	38?	125	119	110	103	53	88%
45-045-0008	GREENVILLE	3855846	371736	GREENVILLE HEALTH DEPT	GREENVILLE	32?	112	100	61	59	32	53%
45-045-2002	GREENVILLE	3866851	387723	1ST BAPTIST CHURCH ANNEX	GREER	32	89	71	65	55	56	93%
45-047-0001	GREENWOOD	3782427	393814	GREENWOOD COUNTY DSS	GREENWOOD	29	91	84	62	53	57	95%
45-047-0002	GREENWOOD	3780864	393053	PREMIER ROAD		28?	79	63	59	59	54	90%
45-049-0001	HAMPTON	3637122	489216	HAMPTON I	HAMPTON	31?	138	89	75	68	50	83%
45-051-0002	HORRY	3731000	696737	MYRTLE BEACH EQC OFFICE	MYRTLE BEACH	30?	67	63	61	56	49	82%
45-055-0001	KERSHAW	3789473	536014	KERSHAW COUNTY HEALTH DEPT.	CAMDEN	26	55	52	52	51	58	97%
45-063-0005	LEXINGTON	3738007	488916	SALTECH		26?	130	67	66	62	54	90%
45-063-1002	LEXINGTON	3758514	493969	CAYCE FIRE STATION	CAYCE	37?	101	91	88	84	50	83%
45-079-0006	RICHLAND	3762547	497871	SC DEPT. PROBATION, PAROLE	COLUMBIA	33	76	67	65	64	55	92%
45-079-0007	RICHLAND	3772372	503485	PARKLANE	COLUMBIA	29	103	72	61	57	58	97%
45-079-0014	RICHLAND	3760083	498204	ENRIGHT (REX) ATHLETIC CENTER	COLUMBIA	37?	106	75	74	72	45	75%
45-079-1006	RICHLAND	3741587	516067	CONGAREE SWAMP NATIONAL MONUMENT		17	43	42	37	37	57	95%
45-083-0001	SPARTANBURG	3867421	414850	SPARTANBURG CITY HALL	SPARTANBURG	33	70	67	63	59	56	93%
45-091-0005	YORK	3868718	499924	ROCK HILL WATER FILTER PLANT	ROCK HILL	41	96	77	73	72	56	93%
ANNUAL AVERAGE =>												87.5%
? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA												

**Lead (PB) - Ug/M3**  
**[Air quality standard = 1.5 Ug/M3 Quarterly Mean]**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	1ST QUARTER		2ND QUARTER		3RD QUARTER		4TH QUARTER		OBSV.
						OBSV.	MEAN	OBSV.	MEAN	OBSV.	MEAN	OBSV.	MEAN	
45-003-1001	AIKEN	3699183	417056	BEECH ISLAND FIRE STATION		9	0.00?	14	0.00	12	0.00	11	0.00?	46
45-013-0001	BEAUFORT	3588480	530370	BEAUFORT COUNTY HEALTH DEPT.	BEAUFORT	9	0.00?	11	0.00?	6	0.00?			26
45-013-0007	BEAUFORT	3588470	530355	BEAUFORT KING STREET	BEAUFORT							11	0.00?	11
45-019-0003	CHARLESTON	3638503	595649	JENKINS AV. FIRE STATION	NORTH CHARLESTON	15	0.01	15	0.01	15	0.00	14	0.01	59
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		14	0.00	15	0.00	11	0.00?	13	0.00	53
45-019-0047	CHARLESTON	3634157	598473	U S NAVAL BASE	NORTH CHARLESTON	14	0.01	15	0.01	13	0.01	11	0.00?	53
45-033-0001	DILLON	3809572	649208	DILLON CITY-COUNTY OFFICE BLDG.	DILLON	15	0.00	15	0.00	15	0.00	15	0.01	60
45-041-0001	FLORENCE	3784358	610696	FLORENCE COUNTY HEALTH DEPT.	FLORENCE	15	0.00	15	0.01	15	0.00	15	0.01	60
45-043-0002	GEORGETOWN	3693255	658389	HOWARD HIGH SCHOOL	GEORGETOWN	15	0.01	15	0.02	12	0.01	15	0.01	57
45-043-0006	GEORGETOWN	3692520	658711	GEORGETOWN CMS	GEORGETOWN	13	0.01	13	0.01	12	0.01	12	0.01	50
45-043-0007	GEORGETOWN	3690944	658375	MARYVILLE POWER SUB STATION	GEORGETOWN	15	0.00	15	0.00	13	0.00	14	0.00	57
45-043-0009	GEORGETOWN	3693858	659490	WINYAH	GEORGETOWN	13	0.01	15	0.01	11	0.01?	14	0.01	53
45-045-0008	GREENVILLE	3855846	371736	GREENVILLE HEALTH DEPT.	GREENVILLE	14	0.01	7	0.00?			11	0.00?	32
45-045-2002	GREENVILLE	3866851	387723	1ST BAPTIST CHURCH ANNEX	GREER	13	0.01	15	0.01	15	0.01	13	0.01	56
45-047-0001	GREENWOOD	3782427	393814	GREENWOOD COUNTY DEPT.	GREENWOOD	14	0.01	13	0.00	15	0.01	15	0.01	57
45-047-0002	GREENWOOD	3780864	393053	PREMIER ROAD		11	0.00?	15	0.01	15	0.02	13	0.01	54
45-049-0001	HAMPTON	3637122	489216	HAMPTON I	HAMPTON	9	0.00?	14	0.00	12	0.00	15	0.01	50
45-051-0002	HORRY	3731000	696737	MYRTLE BEACH EQC OFFICE	MYRTLE BEACH	13	0.01	12	0.00	11	0.00?	13	0.00	49
45-055-0001	KERSHAW	3789473	536014	KERSHAW COUNTY HEALTH DEPT.	CAMDEN	15	0.00	14	0.00	15	0.00	14	0.01	58
45-063-0005	LEXINGTON	3738007	488916	SALTECH				14	0.01	11	0.04?	14	0.04	39
45-079-0006	RICHLAND	3762547	497871	SC DEPT. PROBATION, PAROLE	COLUMBIA	14	0.00	13	0.00	15	0.00	13	0.01	55
45-079-0007	RICHLAND	3772372	503485	PARKLANE	COLUMBIA	15	0.00	14	0.00	14	0.00	15	0.01	58
45-083-0001	SPARTANBURG	3867421	414850	SPARTANBURG CITY HALL	SPARTANBURG	13	0.01	14	0.00	15	0.01	14	0.01	56
45-091-0005	YORK	3868718	499924	ROCK HILL WATER FILTER PLANT	ROCK HILL	13	0.01	15	0.01	14	0.02	14	0.01	56
ANNUAL AVERAGE =>														
? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA														



**Carbon Monoxide (CO) - PPM**  
**[Air quality standard = 35 PPM 1hr Max, 9 PPM 8hr Max]**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	MAX 1-HR			MAX 8-HR			OBSV.	% Complete
						1ST	2ND	OBS> 35	1ST	2ND	OBS> 9		
45-019-0005	CHARLESTON	3628738	598631	ASHE STREET	CHARLESTON	6.5	6.4	0	4.7	4.0	0	7176	82%
45-045-0008	GREENVILLE	3855846	371736	GREENVILLE HEALTH DEPT	GREENVILLE	7.0	6.9	0	5.2	4.8	0	8142	93%
45-079-0013	RICHLAND	3763379	496153	WARDLAW *	COLUMBIA	1.5	1.5	0	1.1	0.9	0	83	69%
45-079-0020	RICHLAND	3763656	496845	STATE HOSPITAL *	COLUMBIA	4.4	4.2	0	3.8	3.7	0	8310	95%
ANNUAL AVERAGE =>													89.8%

\*PARTIAL YEAR - WARDLAW site discontinued and moved to new STATE HOSPITAL site

**Sulfur Dioxide (SO2) - PPM**  
**[Air quality standard = .03 PPM Annual, .139 PPM 24hr, .494 PPM 3hr]**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	ANNUAL	MAX 24HR			MAX 3HR			MAX 1HR	
						MEAN	1ST	2ND	OBS> 0.14	1ST	2ND	OBS> 0.50	1ST	2ND
45-003-0003	AIKEN	3699183	417056	JACKSON MIDDLE SCHOOL		0.003?	0.008	0.007	0	0.024	0.023	0	0.058	0.057
45-011-0001	BARNWELL	3686698	456692	BARNWELL CMS		0.002	0.008	0.004	0	0.068	0.049	0	0.098	0.070
45-019-0003	CHARLESTON	3638503	595649	JENKINS AV. FIRE STATION	NORTH CHARLESTON	0.002	0.012	0.011	0	0.033	0.026	0	0.040	0.037
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.002?	0.008	0.007	0	0.028	0.024	0	0.043	0.033
45-019-0046*	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.002?	0.005	0.004	0	0.016	0.014	0	0.022	0.022
45-043-0006	GEORGETOWN	3692520	658711	GEORGETOWN CMS	GEORGETOWN	0.002?	0.024	0.015	0	0.081	0.077	0	0.144	0.128
45-045-0008	GREENVILLE	3855846	371736	GREENVILLE HEALTH DEPT.	GREENVILLE	0.003	0.011	0.009	0	0.027	0.021	0	0.061	0.036
45-063-0008	LEXINGTON	3767608	485720	SEVEN OAKS RECREATIONAL CTR.	IRMO	0.004	0.029	0.017	0	0.099	0.099	0	0.219	0.130
45-073-0001	OCONEE	3853504	295318	ROUND MT. FIRE TOWER (LONG CREEK)		0.002	0.006	0.006	0	0.012	0.010	0	0.018	0.014
45-079-0007	RICHLAND	3772372	503485	PARKLANE - STATE PARK HEALTH CTR.	COLUMBIA	0.003	0.008	0.008	0	0.036	0.034	0	0.057	0.046
45-079-1003	RICHLAND	3764672	496666	SCDHEC PARKING LOT	COLUMBIA	0.003	0.010	0.010	0	0.035	0.034	0	0.073	0.047
45-079-1006	RICHLAND	3741587	516067	CONGAREE SWAMP NATIONAL MONUMENT		0.002	0.009	0.008	0	0.034	0.034	0	0.071	0.062

ANNUAL AVERAGE =>

? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA

\*SITE MOVED IN 1999



**Nitrogen Dioxide (NO2) - PPM**  
**[Air quality standard = .053 PPM Annual Mean]**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	ANNUAL	MAX 1HR		OBSV	%
						MEAN	1ST	2ND		Complete
45-003-0003	AIKEN	3699183	417056	JACKSON MIDDLE SCHOOL		0.005	0.038	0.034	7003	80%
45-011-0001	BARNWELL	3686698	456692	BARNWELL CMS		0.003?	0.022	0.022	6453	74%
45-019-0003	CHARLESTON	3638503	595649	JENKINS AV. FIRE STATION	NORTH CHARLESTON	0.010	0.062	0.059	6658	76%
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.005?	0.032	0.031	6265	72%
45-019-0046*	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.003?	0.013	0.011	3513	57%
45-045-0008	GREENVILLE	3855846	371736	GREENVILLE HEALTH DEPT	GREENVILLE	0.017	0.075	0.073	8216	94%
45-079-0007	RICHLAND	3772372	503485	PARKLANE - STATE PARK HEALTH CTR	COLUMBIA	0.014	0.072	0.070	7348	84%
45-079-1006	RICHLAND	3741587	516067	CONGAREE SWAMP NATIONAL MONUMENT		0.003?	0.022	0.017	2861	33%
ANNUAL AVERAGE =>										71.6%
? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA										
*SITE MOVED IN 1999										

**Acid Rain**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	Annual Average Weighted pH												
						1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	
45-001-0001	ABBEVILLE	3798898	372478	DUE WEST	COLUMBIA							4.27	4.44	4.34	4.49	4.57	4.48	
45-011-0001	BARNWELL	3686698	456692	BARNWELL CMS						4.47	4.40	4.35	4.39	4.38	4.60	4.63	4.52	
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		4.59	4.42	4.47	4.39	4.32		4.37	4.43	4.06	4.69	4.46	4.57	
45-021-0002	CHEROKEE	3887598	425619	COWPENS NATIONAL BATTLE GROUND						4.37	4.46	4.27	4.30	4.26	4.35	4.45	4.37	
45-073-0001	OCONEE	3853504	295318	ROUND MT. FIRE TOWER (LONG CREEK)		4.32	4.26	4.29	4.35	4.44	4.38	4.27	4.42	4.28	4.51	4.60	4.43	
45-079-0007	RICHLAND	3772372	503485	PARKLANE - STATE PARK HEALTH CTR						4.28	4.33	4.38	4.30	4.28	4.28	4.54	4.49	4.53
45-079-1006	RICHLAND	3741587	516067	CONGAREE SWAMP NATIONAL MONUMENT		4.55	4.48	4.37	4.35	4.36	4.36	4.33	4.44	4.26	4.59	4.58	4.52	
45-087-0001	UNION	3821887	448587	DELTA		4.36	4.37	4.38	4.12	4.38	4.36	4.36	4.39	4.33	4.54	4.52	4.51	
ANNUAL AVERAGE =>						4.46	4.38	4.38	4.30	4.38	4.39	4.32	4.39	4.28	4.54	4.54	4.49	

**Ozone (O3) - PPM**  
**[Air quality standard = .125 PPM 1hr Daily Max]**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	MAX 1HR				OBS> .124	OBSV.	% Complete
						1ST	2ND	3RD	4TH			
45-001-0001	ABBEVILLE	3798898	372478	DUE WEST		0.106	0.105	0.105	0.101	0	238	96%
45-003-0003	AIKEN	3689312	426614	JACKSON MIDDLE SCHOOL		0.113	0.108	0.104	0.104	0	208	85%
45-007-0003	ANDERSON	3848907	363630	POWDERSVILLE		0.126	0.118	0.114	0.113	1	330	90%
45-011-0001	BARNWELL	3686698	456692	BARNWELL CMS		0.103	0.098	0.097	0.095	0	345	95%
45-015-0002	BERKELEY	3650181	599351	BUSHY PARK PUMP		0.103	0.099	0.090	0.087	0	203	87%
45-019-0042	CHARLESTON	3641594	596762	U S ARMY RESERVE		0.109	0.098	0.098	0.097	0	353	97%
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.104	0.101	0.101	0.098	0	300	82%
45-019-0046*	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.099	0.092	0.083	0.082	0	92	37%
45-021-0002	CHEROKEE	3887598	425619	COWPENS NATIONAL BATTLE GROUND		0.113	0.111	0.104	0.102	0	286	99%
45-023-0002	CHESTER	3849885	481373	CHESTER AIRPORT		0.133	0.112	0.112	0.110	1	233	98%
45-029-0002	COLLETON	3651959	503269	ASHTON		0.096	0.093	0.091	0.091	0	203	86%
45-031-0003	DARLINGTON	3794336	615539	PEE DEE EXP. STATION		0.110	0.104	0.104	0.102	0	360	99%
45-037-0001	EDGEFIELD	3733431	420928	TRENTON		0.110	0.102	0.097	0.093	0	359	98%
45-073-0001	OCONEE	3853504	295318	ROUND MT. FIRE TOWER (LONG CREEK)		0.102	0.095	0.092	0.092	0	355	97%
45-077-0002	PICKENS	3835941	331505	CLEMSON CMS	CLEMSON	0.114	0.109	0.108	0.108	0	190	79%
45-079-0007	RICHLAND	3772372	503485	PARKLANE - STATE PARK HEALTH CTR	COLUMBIA	0.130	0.117	0.109	0.108	1	340	93%
45-079-1002	RICHLAND	3776444	511449	SANDHILL		0.114	0.112	0.105	0.105	0	340	93%
45-079-1006	RICHLAND	3741587	516067	CONGAREE SWAMP NATIONAL MONUMENT		0.109	0.106	0.103	0.101	0	216	83%
45-083-0009	SPARTANBURG	3872111	401836	NORTH SPARTANBURG FIRE STATION		0.123	0.122	0.112	0.108	0	282	90%
45-087-0001	UNION	3821887	448587	DELTA		0.116	0.099	0.099	0.096	0	362	99%
45-089-0001	WILLIAMSBURG	3732242	632955	INDIANTOWN		0.097	0.089	0.089	0.085	0	212	88%
45-091-0006	YORK	3865723	479147	YORK CMS		0.114	0.107	0.104	0.102	0	231	91%
ANNUAL AVERAGE =>												89.2%
*SITE MOVED IN 1999												

[Air quality standard = .085 PPM 8hr Daily Average Max]

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	MAX 8HR				OBS> .084	OBSV.	%
						1ST	2ND	3RD	4TH			Complete
45-001-0001	ABBEVILLE	3798898	372478	DUE WEST		0.100	0.094	0.092	0.090	8	5666	96%
45-003-0003	AIKEN	3689312	426614	JACKSON MIDDLE SCHOOL		0.101	0.095	0.087	0.084	3	5044	85%
45-007-0003	ANDERSON	3848907	363630	POWDERSVILLE		0.113	0.105	0.102	0.099	16	7939	91%
45-011-0001	BARNWELL	3686698	456692	BARNWELL CMS		0.095	0.094	0.088	0.087	6	8344	95%
45-015-0002	BERKELEY	3650181	599351	BUSHY PARK PUMP		0.089	0.087	0.083	0.081	2	5145	92%
45-019-0042	CHARLESTON	3641594	596762	U S ARMY RESERVE		0.097	0.085	0.084	0.084	2	8556	98%
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.086	0.085	0.083	0.080	2	7289	83%
45-019-0046*	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		0.081	0.080	0.079	0.077	0	2299	39%
45-021-0002	CHEROKEE	3887598	425619	COWPENS NATIONAL BATTLE GROUND		0.103	0.100	0.094	0.094	9	6852	98%
45-023-0002	CHESTER	3849885	481373	CHESTER AIRPORT		0.118	0.096	0.095	0.094	15	5572	98%
45-029-0002	COLLETON	3651959	503269	ASHTON		0.086	0.084	0.083	0.082	1	4897	86%
45-031-0003	DARLINGTON	3794336	615539	PEE DEE EXP. STATION		0.094	0.093	0.092	0.091	11	8600	98%
45-037-0001	EDGEFIELD	3733431	420928	TRENTON		0.099	0.092	0.087	0.086	5	8624	98%
45-073-0001	OCONEE	3853504	295318	ROUND MT. FIRE TOWER (LONG CREEK)		0.093	0.088	0.087	0.087	5	8520	97%
45-077-0002	PICKENS	3835941	331505	CLEMSON CMS	CLEMSON	0.104	0.100	0.099	0.094	10	4600	80%
45-079-0007	RICHLAND	3772372	503485	PARKLANE - STATE PARK HEALTH CTR	COLUMBIA	0.097	0.097	0.095	0.094	10	8295	95%
45-079-1002	RICHLAND	3776444	511449	SANDHILL		0.102	0.097	0.095	0.093	9	8195	94%
45-079-1006	RICHLAND	3741587	516067	CONGAREE SWAMP NATIONAL MONUMENT		0.082	0.081	0.080	0.080	0	4994	80%
45-083-0009	SPARTANBURG	3872111	401836	NORTH SPARTANBURG FIRE STATION		0.110	0.101	0.100	0.100	11	6723	89%
45-087-0001	UNION	3821887	448587	DELTA		0.108	0.093	0.088	0.085	4	8642	99%
45-089-0001	WILLIAMSBURG	3732242	632955	INDIANTOWN		0.085	0.081	0.076	0.076	1	5080	88%
45-091-0006	YORK	3865723	479147	YORK CMS		0.099	0.095	0.095	0.092	7	5595	92%
ANNUAL AVERAGE =>												89.6%
*SITE MOVED IN 1999												

**Particulate Matter (PM10) - Ug/M3**  
**[Air quality standard = 50 Ug/M3 Annual Mean, 150 Ug/M3 24hr]**

SITE ID	COUNTY	UTM-N	UTM-E	SITE NAME	CITY	WTD	1ST MAX	2ND MAX	3RD MAX	4TH MAX	OBS> 150	OBSV	%
						ARITH MEAN							Complete
45-003-0003	AIKEN	3689312	426614	JACKSON MIDDLE SCHOOL		21?	55	44	39	38	0	54	90%
45-011-0001	BARNWELL	3686698	456692	BARNWELL CMS		19	45	41	39	37	0	59	98%
45-019-0003*	CHARLESTON	3638503	595649	JENKINS AV. FIRE STATION	NORTH CHARLESTON	21?	51	47	46	46	0	227	62%
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		18?	49	41	31	30	0	50	83%
45-019-0047	CHARLESTON	3634157	598473	U S NAVAL BASE	NORTH CHARLESTON	21	54	44	38	36	0	53	88%
45-039-8001	FAIRFIELD	3791655	508081	RIDGEWAY #1		20	47	42	37	36	0	56	93%
45-039-8002	FAIRFIELD	3792767	511046	RIDGEWAY #2		24	52	43	41	39	0	55	92%
45-043-0002	GEORGETOWN	3693255	658389	HOWARD HIGH SCHOOL	GEORGETOWN	29	69	69	64	57	0	53	88%
45-043-0006*	GEORGETOWN	3692520	658711	GEORGETOWN CMS	GEORGETOWN	32	79	77	70	66	0	330	90%
45-043-0009	GEORGETOWN	3693858	659490	WINYAH	GEORGETOWN	23	63	56	50	49	0	50	83%
45-045-1002*	GREENVILLE	3859348	370287	PARKER FIRE STATION	GREENVILLE	26?	59	52	51	51	0	182	50%
45-063-0005*	LEXINGTON	3738007	488916	SALTECH		29?	114	94	81	78	0	121	67%
45-063-0005	LEXINGTON	3738007	488916	SALTECH		19?	41	37	34	32	0	28	47%
45-063-0009*	LEXINGTON	3759006	495150	CAYCE CMS	CAYCE	55?	148	148	148	131	0	251	69%
45-079-0007	RICHLAND	3772372	503485	PARKLANE	COLUMBIA	22	49	41	40	37	0	54	90%
45-079-0014	RICHLAND	3760083	498204	ENRIGHT (REX) ATHLETIC CENTER	COLUMBIA	24	56	53	42	41	0	59	98%
45-079-0018*	RICHLAND	3759991	496305	OLYMPIA	COLUMBIA	40?	147	122	105	102	0	242	66%
45-079-0019	RICHLAND	3761007	497794	BATES HOUSE (USC)	COLUMBIA	24	53	48	44	42	0	56	93%
45-079-1003	RICHLAND	3764672	496666	SCDHEC PARKING LOT	COLUMBIA	22?	46	40	38	35	0	49	82%
45-083-0001	SPARTANBURG	3867421	414850	SPARTANBURG CITY HALL	SPARTANBURG	26	50	46	42	41	0	58	97%
45-091-0005	YORK	3868718	499924	ROCK HILL WATER FILTER PLANT	ROCK HILL	26	53	49	48	46	0	57	95%
ANNUAL AVERAGE =>													82.0%

? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA

\* CONTINUOUS MONITOR

**Particulate Matter (PM2.5) - Ug/M3**  
**[Air quality standard = 15 Ug/M3 Annual Mean, 65 Ug/M3 24hr]**

<u>SITE ID</u>	<u>COUNTY</u>	<u>UTM-N</u>	<u>UTM-E</u>	<u>SITE NAME</u>	<u>CITY</u>	<u>MEAN</u>	<u>1ST MAX</u>	<u>2ND MAX</u>	<u>3RD MAX</u>	<u>4TH MAX</u>	<u>OBS&gt; 65</u>	<u>OBSV</u>	<u>% Complete</u>
45-013-0007	BEAUFORT	3588470	530355	BEAUFORT KING STREET	BEAUFORT	13.5?	39.8	39.2	39.1	32.2	0	75	80%
45-019-0046	CHARLESTON	3645337	625554	CAPE ROMAIN WILDLIFE REFUGE		11.6	38.5	34.6	33.7	28.2	0	105	87%
45-019-0048	CHARLESTON	3649274	587347	CHARLESTON FAA BEACON	CHARLESTON	12.8?	37.5	36.9	35.9	34.7	0	239	92%
45-019-0049	CHARLESTON	3628389	597515	CHARLESTON PUBLIC WORKS	CHARLESTON	13.0	37.9	36.9	36.9	36.7	0	323	88%
45-029-0002	COLLETON	3651959	503269	ASHTON		14.0?	37.3	33.7	27.8	26.2	0	64	74%
45-029-0002*	COLLETON	3651959	503269	ASHTON		13.2?	42.0	35.7	32.1	30.3	0	138	73%
45-037-0001	EDGEFIELD	3733431	420928	TRENTON		15.2?	36.3	34.2	33.4	31.1	0	76	93%
45-037-0001*	EDGEFIELD	3733431	420928	TRENTON		14.4?	34.7	34.6	33.5	32.7	0	147	69%
45-041-0002	FLORENCE	3781130	605971	H L SNEED MIDDLE SCHOOL	FLORENCE	14.5?	35.1	31.7	31.2	29.2	0	94	90%
45-043-0009	GEORGETOWN	3693858	659490	WINYAH	GEORGETOWN	13.4	40.6	32.1	29.9	29.6	0	106	91%
45-045-0009	GREENVILLE	3862420	380028	TAYLORS	TAYLORS	18.7?	37.5	37.4	36.1	35.7	0	200	93%
45-047-0003	GREENWOOD	3786176	391936	MERRYWOOD SCHOOL		15.7	36.0	34.4	32.5	31.1	0	102	84%
45-063-0005	LEXINGTON	3738007	488916	SALTECH		14.8	40.1	36.9	34.6	33.0	0	115	95%
45-063-0008	LEXINGTON	3767608	485720	SEVEN OAKS RECREATIONAL CTR	IRMO	16.5	43.2	38.3	37.0	34.3	0	112	93%
45-063-0009*	LEXINGTON	3759006	495150	CAYCE CMS	CAYCE	24.1?	52.6	49.4	48.9	48.7	0	200	87%
45-073-0001	OCONEE	3853504	295318	ROUND MT. FIRE TOWER (LONG CREEK)		13.4	33.9	31.1	29.0	26.9	0	94	78%
45-079-0007	RICHLAND	3772372	503485	PARKLANE	COLUMBIA	15.4	45.5	36.2	32.4	30.2	0	99	82%
45-079-0018*	RICHLAND	3759991	496305	OLYMPIA	COLUMBIA	17.6?	37.7	36.8	34.6	32.3	0	78	57%
45-079-0019	RICHLAND	3761007	497794	BATES HOUSE (USC)	COLUMBIA	16.0	43.2	38.4	36.9	35.4	0	115	95%
45-083-0008*	SPARTANBURG	3859656	411757	ROEBUCK - PECAN		14.2?	25.9	25.2	21.9	20.5	0	41	91%
45-083-0009*	SPARTANBURG	3872111	401836	NORTH SPARTANBURG FIRE STATION		14.4?	32.5	29.7	29.7	27.2	0	139	90%
45-083-0010	SPARTANBURG	3865174	408207	WEST VIEW ELEMETARY SCHOOL		15.7	36.8	35.3	34.5	33.9	0	324	89%
45-091-0006	YORK	3865723	479147	YORK CMS		14.3	38.8	35.5	32.0	28.9	0	89	74%
ANNUAL AVERAGE =>													84.5%

? INDICATES THAT THE MEAN DOES NOT SATISFY SUMMARY CRITERIA

\* CONTINUOUS MONITOR

EXCEPTIONAL EVENT DATA EXISTS IN AT LEAST ONE OF THE ABOVE SITES, BUT IS NOT INCLUDED IN THE SUMMARY CALCULATIONS.

## APPENDIX B — ACRONYMS

<b>AFV</b>	Alternative Fuel Vehicle
<b>AIRS</b>	Aerometric Information Retrieval System
<b>ALAPCO</b>	Association of Local Air Pollution Control Officials
<b>ALIS</b>	Asbestos Licensing Information System
<b>APDLN</b>	Air Pollution Distance Learning Network
<b>APTI</b>	Air Pollution Training Institute
<b>AQI</b>	Air Quality Index
<b>AQCRs</b>	Air Quality Control Regions
<b>BACT</b>	Best Available Control Technology
<b>BAQ</b>	Bureau of Air Quality
<b>BDT</b>	Best Demonstrated Technology
<b>BTU</b>	British Thermal Unit (mmBTU= one million BTUs)
<b>CAA</b>	Clean Air Act
<b>CAAA</b>	Clean Air Act Amendments
<b>CAP</b>	Citizen's Advisory Panel Clean Air Partnership
<b>CAPCA</b>	Carolina Air Pollution Control Association
<b>CARB</b>	California Air Resources Board
<b>CEMS</b>	Continuous Emissions Monitoring Systems
<b>CEP</b>	Cumulative Exposure Project
<b>CFCs</b>	Chlorofluorocarbons
<b>CFR</b>	Code of Federal Regulations
<b>CO</b>	Carbon Monoxide
<b>CTGs</b>	Control Technique Guidelines
<b>DASM</b>	District Air Section Manager
<b>DASP</b>	District Air Section Personnel
<b>DHEC</b>	Department of Health & Environmental Control
<b>ECOS</b>	Environmental Council of States
<b>EFIS</b>	Environmental Facilities Information System

<b>EPA</b>	Environmental Protection Agency
<b>ERP</b>	Early Reductions Program
<b>FHA</b>	Federal Highway Administration
<b>FIP</b>	Federal Implementation Plan
<b>FTA</b>	Federal Transit Administration
<b>HAPs</b>	Hazardous Air Pollutants
<b>HDDEM</b>	Heavy Duty Diesel Engine Manufacturer
<b>HON</b>	Hazardous Organic NESHAP
<b>IAQ</b>	Indoor Air Quality
<b>LAER</b>	Lowest Achievable Emission Rate
<b>LEV</b>	Low Emission Vehicle
<b>MAAC</b>	Maximum Allowable Ambient Concentration
<b>MACT</b>	Maximum Achievable Control Technology
<b>MOU</b>	Memorandum of Understanding
<b>MPO</b>	Metropolitan Planning Organization
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NAICS</b>	North American Industrial Classification System
<b>NAMS</b>	National Air Monitoring Stations
<b>NARS</b>	National Asbestos Registry System
<b>NATA</b>	National Air Toxics Assessment
<b>NEPA</b>	National Environmental Policy Act
<b>NESHAP</b>	National Emission Standards for Hazardous Air Pollutants
<b>NETI</b>	National Enforcement Training Institute
<b>NO<sub>x</sub></b>	Oxides of Nitrogen
<b>NSPS</b>	New Source Performance Standards
<b>NSR</b>	New Source Review
<b>NTI</b>	National Toxics Inventory
<b>O<sub>3</sub></b>	Ozone
<b>OTAG</b>	Ozone Transport Assessment Group
<b>Pb</b>	Lead

<b>PCA</b>	Pollution Control Act
<b>PM (or PT)</b>	Particulate Matter
<b>PSD</b>	Prevention of Significant Deterioration
<b>PSI</b>	Pollutant Standard Index
<b>RACT</b>	Reasonably Available Control Technology
<b>RMP</b>	Risk Management Plan
<b>SAMI</b>	Southern Appalachian Mountains Initiative
<b>SARA</b>	Superfund Amendments and Reauthorization Act
<b>SBAP</b>	Small Business Assistance Program
<b>SCR</b>	Selective Catalytic Reduction
<b>SESARM</b>	Southeastern States Air Resource Managers
<b>SI</b>	Self Instruction
<b>SIC</b>	Standard Industrial Classification (Codes)
<b>SIP</b>	State Implementation Plan
<b>SLAMS</b>	State and Local Air Monitoring Stations
<b>SO<sub>x</sub></b>	Sulfur Oxides
<b>STAPPA</b>	State and Territorial Air Pollution Program Administrators
<b>TAPs</b>	Toxic Air Pollutants
<b>TCM</b>	Transportation Control Measures
<b>TEA-21</b>	Transportation Equity Act for the 21st Century
<b>TLVs</b>	Threshold Limit Values
<b>TRI</b>	Toxic Release Inventory
<b>TSP</b>	Total Suspended Particulate
<b>VOC</b>	Volatile Organic Compounds



## APPENDIX C — TERMS

The following terms are necessarily general and are offered for educational purposes only. This information should not be relied upon for decisions or determinations regarding permitting, compliance, or any other activities.

**Acid Rain:** Snow, sleet, hail, rain, or fog, that has a low pH resulting from pollutants in the air, especially sulfur dioxide and nitrogen oxides.

**Air Pollution:** The contamination of the atmosphere by pollutants from industry, fuel exhaust, and other pollution-creating processes.

**Air Quality Index:** A guide used to show the amount of certain air pollutants in the outside air and provide information about possible health effects.

**Air Quality Monitoring:** Observation or testing to measure pollutants in the outdoor air.

**Air Quality Standards:** The maximum concentration of pollutants allowed by laws or regulations during a specified time in a defined area.

**Ambient Air:** Outside air.

**Area Source:** A source of air pollution not emitted from industrial stacks or vents. For example, fireplaces, wood stoves, and gas-powered lawn equipment.

**Biogenic Emissions:** Air pollution from natural sources such as trees, shrubs, and other vegetation.

**Catalytic Converter:** A device used to reduce air pollution from vehicle exhaust.

**Chlorofluorocarbons (CFCs):** chemicals used as coolants for refrigeration and air conditioning as well as in some consumer products like aerosol hairspray. These chemicals are harmful to the *ozone layer*.

**Clean Air Act:** The legislation, originally enacted in 1963, revised in 1970, 1977, and amended in 1990, that is the basis for the national air pollution control program.

**Clean Fuels:** Low-pollution fuels like ethanol or compressed natural gas (CNG). that can replace traditional fuels.

**Climate:** Weather conditions such as temperature, precipitation, and wind that are typical in an area or region over time.

**Combustion:** Burning of coal, wood, or other material accompanied by release of energy in the form of heat and light, a major contributor to air pollution.

**Compliance:** The full implementation and observance of state and federal requirements, standards, and regulations.

**Criteria Pollutants:** Pollutants for which there is a *National Ambient Air Quality Standard* (NAAQS). These pollutants include ozone, lead, particulate matter, nitrogen dioxide, sulfur dioxide, and carbon monoxide.

**South Carolina Department of Health and Environmental Control (SC DHEC):** DHEC was created in 1973 when the State Board of Health and the Pollution Control Authority merged. DHEC is responsible for protecting the state's environment and the health of all South Carolinians.

**Emissions:** Discharges into the atmosphere from sources such as industrial stacks, or vents; from residential chimneys; and from motor vehicles, locomotive, and aircraft exhaust.

**Environmental Protection Agency (EPA):** The EPA was created in 1970 to set policy and guidelines and to carry out legal mandates to protect environmental resources at the national level.

**Fossil Fuels:** A combustible material such as coal, petroleum, or natural gas.

**Greenhouse Effect:** The trapping of heat on the surface of the earth.

**Inversion:** In the atmosphere, a layer of warm air that lies over a cooler air mass. An inversion traps pollutants close to the earth's surface.

**Meteorology:** Science that deals with the atmosphere and physical processes that cause weather patterns.

**National Ambient Air Quality Standards (NAAQS):** Laws or regulations which establish the concentration limits for criteria pollutants in the outside air.

**Non-attainment Area:** A region or area that fails to meet the standards for one or more of the criteria pollutants.

**Open Burning:** The burning of any material in open fire or an outdoor container when specifically designed equipment is not used to control the combustion of air pollution from the fire.

**Ozone:** A very reactive molecule made up of three oxygen atoms. Ozone can be either good or bad, depending upon where it is. *Ground-level*

*ozone* occurs near the earth's surface in the troposphere and is harmful to our lungs and to the environment. The *ozone layer*, 10-35 miles above the earth's surface in the stratosphere, protects us from the sun's harmful rays.

**Particulate Matter:** Small solid particles, like dust, or liquid droplets that are suspended in the air.

**Plume:** Visible emissions from a smokestack or chimney.

**Smog:** A mixture of air pollution, including ground-level ozone, produced by chemical reactions in the air. Smog can harm health, damage the environment, and cause poor visibility.

**Stationary (or Point) Source:** A non-mobile source of air pollution such as a power plant or manufacturing facility that emits air pollution.

**Sensitive Groups:** Those who are at greater risk from the harmful effects of air pollution like children and people with respiratory diseases such as asthma, chronic bronchitis, and emphysema.

**Toxic Release Inventory (TRI):** Information from industries about releases of toxic substances above a specified quantity into the environment.

## **APPENDIX D — ENVIRONMENTAL QUALITY CONTROL DISTRICT OFFICES**

### **Appalachia I EQC**

Anderson and Oconee counties  
2404 N. Main Street  
Anderson, SC 29621  
Phone: (864) 260-5569  
Fax: (864) 260-4855

### **Appalachia II EQC**

Greenville and Pickens counties  
301 University Ridge, Suite 5800  
Greenville, SC 29601  
Phone: (864) 241-1090  
Fax: (864) 241-1092

### **Appalachia III EQC**

Cherokee, Spartanburg, and Union counties  
975-C N. Church Street  
Spartanburg, SC 29303-2712  
Phone: (864) 596-3800  
Fax: (864) 596-2136

### **Catawba EQC**

Chester, Lancaster, and York counties  
2475 DHEC Road  
Lancaster, SC 29720

Phone: (803) 285-7461  
Fax: (803) 285-5594

### **Central Midlands EQC**

Fairfield, Lexington, Newberry, and Richland counties  
Bldg. #5 / PO Box 156  
State Park, SC 29147  
Phone: (803) 935-7015  
Fax: (803) 935-6724

### **Low Country EQC**

Beaufort, Colleton, Hampton, and Jasper counties  
1313 Thirteenth Street  
Port Royal, SC 29935  
Phone: (843) 522-9097  
Fax: (843) 522-8463

### **Lower Savannah EQC**

Aiken, Allendale, Bamberg, Barnwell, Calhoun, and Orangeburg counties  
206 Beaufort Street, NE  
Aiken, SC 29801  
Phone: (803) 641-7670  
Fax: (803) 641-7675

### **Pee Dee EQC**

Chesterfield, Darlington, Dillon, Florence, Marion, and Marlboro counties  
145 E. Cheves Street  
Florence, SC 29506  
Phone: (843) 661-4825  
Fax: (843) 661-4858

**Trident EQC**

Berkeley, Charleston, and Dorchester counties  
1362 McMillan Avenue, Suite 300  
Charleston, SC 29405  
Phone: (843) 740-1590  
Fax: (843) 740-1595

**Upper Savannah EQC**

Abbeville, Edgefield, Greenwood, McCormick, and Saluda counties  
613 South Main Street  
Greenwood, SC 29646  
Phone: (864) 223-0333  
Fax: (864) 233-6935

**Waccamaw EQC**

Georgetown, Horry, and Williamsburg counties  
1705 Oak Street Plaza, Suite #2  
Myrtle Beach, SC 29577  
Phone: (843) 448-1902  
Fax: (843) 946-9390

**Wateree EQC**

Clarendon, Kershaw, Lee, and Sumter counties  
105 Magnolia Street / PO Box 1628  
Sumter, SC 29151  
Phone: (803) 778-6548  
Fax: (803) 773-6366

**APPENDIX E — CONTACT INFORMATION****Bureau of Air Quality**

(803) 898-4123

**Bureau of Environmental Services**

(803) 898-3930

**Bureau of Land and Waste Management**

(803) 896-4000

**Bureau of Water**

(803) 898-4300

**Center for Waste Minimization**

(803) 898-3971

**Educational Resource Center**

(803) 898-3804

**Enforcement Liaison**

(803) 898-3967

**Federal Facilities Liaison**

(803) 896-4055

**Permitting Liaison**

(803) 898-3957

**Risk Communication Liaison**

(803) 898-3929

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